

ANNUAL CALENDAR  
OF  
MCGILL COLLEGE  
AND  
UNIVERSITY

FOR SESSION 1896-97.

WITH



EXAMINATION PAPERS

FOR SESSION 1895-96.

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Montreal :

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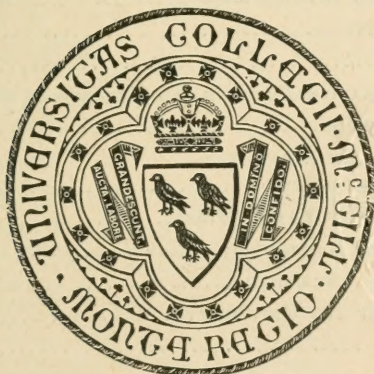






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ANNUAL CALENDAR  
OF  
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AND  
UNIVERSITY,  
MONTREAL.



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SESSION 1896-97.

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The Statutes and Regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its religious character the University is Protestant, but not denominational, and while all possible attention will be given to the character and conduct of Students, no interference with their individual views will be sanctioned.

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**THE FACULTY OF ARTS.**—The complete course of study extends over four Sessions of eight months each; and includes Classics and Mathematics, Experimental Physics, English Literature, Logic, Mental and Moral Science, Natural Science, and one Modern Language or Hebrew. The course of study is, with few exceptions, the same for all Students in the first two years; but in the third and fourth years extensive options are allowed, more especially in favour of the Honour Courses in Classics, Mathematics, Mental and Moral Science, Natural Science, English Literature, Modern and Semitic Languages. Certain exemptions are also allowed to professional students. The course of study leads to the Degrees of B.A., M.A. and LL.D.

The Degree of B.A. from this University admits the holder to the study of the learned professions without preliminary examination, in the Provinces of Quebec and Ontario, and in Great Britain and Ireland, etc.

In the Session 1894-5, special regulations were sanctioned by the Corporation, by which the degree of B.A. can be obtained along with the degree in the Faculty of Medicine or of Applied Science in six years. This is effected by avoiding the duplication of courses in the same subjects or in those which give the same educational training, and by a proper adaptation of the time tables. A certificate of Literate in Arts will be given along with the degree in either Faculty to candidates who have completed two years in Arts before entering the Professional Faculty.

The Degree of B.A. can be obtained along with the degree in the Faculty of Law also in six years.

**THE DONALD SPECIAL COURSE IN ARTS** provides for the education of women, in separate classes, with course of study, exemptions, degrees and honours similar to those for men.

**THE FACULTY OF APPLIED SCIENCE** provides a thorough professional training, extending over four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, Electrical Engineering, and Practical Chemistry, leading to the Degrees of Bachelor of Applied Science, Master of Engineering, and Master of Applied Science.

**THE FACULTY OF MEDICINE.**—The complete course of study in Medicine extends over four Sessions of nine months each, and leads to the Degree of M.D., C.M.

**THE FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.**—The complete course extends over three Sessions of six months each, and leads to the Degree of D.V.S.

**THE FACULTY OF LAW.**—The complete course of law extends over three Sessions of eight months each, and leads to the Degrees of B.C.L. and D.C.L.

## II. AFFILIATED COLLEGES.

Students of Affiliated Colleges are matriculated in the University, and may pursue their course of study wholly in the Affiliated College, or in part in McGill College, and may come up to the University Examinations on the same terms as the students of McGill College.

MORRIN COLLEGE, *Quebec*.—Is affiliated in so far as regards Degrees in Arts and Law. [Detailed information may be obtained from the Rev. Donald Macrae, D.D., Principal.]

ST. FRANCIS COLLEGE, *Richmond, P.Q.*—Is affiliated in so far as regards the Intermediate Examinations in Arts. [Detailed information may be obtained from J. A. DRESSER, B.A., Principal.]

THE STANSTEAD WESLEYAN COLLEGE, *Stanstead, P.Q.*—Is affiliated in so far as regards the Intermediate Examination in Arts. [Detailed information may be obtained from the Rev. C. R. FLANDERS, B.A., Principal.]

## III. AFFILIATED THEOLOGICAL COLLEGES.

Affiliated Theological Colleges have the right of obtaining for their students the advantage, in whole or in part, of the course of study in Arts, with such facilities in regard to exemptions as may be agreed on.

THE CONGREGATIONAL COLLEGE OF BRITISH NORTH AMERICA, *Montreal*. Principal, REV. WILLIAM M. BARBOUR, D.D., 58 McTavish St.

THE PRESBYTERIAN COLLEGE, MONTREAL, in connection with the Presbyterian Church in Canada. Principal, REV. D. H. MACVICAR, D.D., LL.D., 69 McTavish St.

THE DIOCESAN COLLEGE OF MONTREAL. Principal, REV. CANON HENDERSON, M.A., D.D., 201 University St.

THE WESLEYAN COLLEGE OF MONTREAL. Principal, REV. W. I. SHAW, M.A., LL.D., 228 University St.

(Calendars of the above Colleges and all necessary information may be obtained on application to their Principals.)

## IV. MCGILL NORMAL SCHOOL.

THE MCGILL NORMAL SCHOOL provides the training requisite for Teachers of Elementary and Model Schools and Academies. Teachers trained in this School are entitled to Provincial Diplomas, and may, on conditions stated in the announcement of the School, enter the classes in the Faculty of Arts for Academy Diplomas and for the Degree of B.A. Principal, S. P. ROBINS, LL.D., 32 Belmont St., Montreal.

## V. AFFILIATED HIGH SCHOOLS, ETC.

The Trafalgar Institute for the higher education of women, Simpson St., Montreal, Principal, Miss Grace Fairley. The High School of Montreal, and The Girls' High School of Montreal, Metcalfe St., Principal, Rev. I. Elson Rexford, B.A.

*Schools which have prepared successful candidates for A.A. or for matriculation (June, 1896).*

High School, Montreal; Girls' High School, Montreal; Montreal Coll. Inst.; Abingdon School, Montreal; St. John the Evangelist School, Montreal; Westmount Academy; Arnprior High School; Aylmer Acad.; Bedford Acad.; Bishop's College School; Bishop Ridley Coll.; St. Catharines; Brantford Coll. Inst.; Brockville Coll. Inst.; Coaticook Acad.; Compton Ladies Coll.; Cookshire Acad.; Cowansville Acad.; Danville Acad.; Dunham Ladies Coll.; High School, Fergus, Ont.; Granby Acad.; Haldimand Model School; Hamilton Coll. Inst.; Huntingdon Acad.; Inverness Acad.; Kingston Ladies' Coll.; Knowlton Acad.; Lachute Acad.; New Westminster High School; Ottawa Coll. Inst.; Paspébeac Model School; Pembroke High School; Quebec High School; St. Francis Coll. School; High School, St. Johns, Q.; St. Lambert Model School; Sherbrooke Acad.; Stanstead Wesleyan Coll.; Stratford Coll. Inst.; Sutton Acad.; Sydney Acad.; Three Rivers Acad.; Trinity Coll. School, Port Hope, Ont.; Vancouver High School; Vankleek Hill High School; Victoria High School, St. John, N.B.; Waterloo Acad.; Williamstown High School.



# ACADEMICAL YEAR 1896-97.

## SEPTEMBER, 1896.

## NOVEMBER, 1896.

|                  |                                                                                                                                                                       |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Tuesday        | Normal School opens.                                                                                                                                                  |
| 2 Wednesday      |                                                                                                                                                                       |
| 3 Thursday       |                                                                                                                                                                       |
| 4 Friday         |                                                                                                                                                                       |
| 5 Saturday       |                                                                                                                                                                       |
| 6 <b>SUNDAY</b>  | Meeting of Medical Faculty.                                                                                                                                           |
| 7 Monday         | Matriculation in Law and Lectures in Law begin.                                                                                                                       |
| 8 Tuesday        | Meeting of Normal School Com.                                                                                                                                         |
| 9 Wednesday      | Meeting of Estate Committee.                                                                                                                                          |
| 10 Thursday      |                                                                                                                                                                       |
| 11 Friday        |                                                                                                                                                                       |
| 12 Saturday      |                                                                                                                                                                       |
| 13 <b>SUNDAY</b> |                                                                                                                                                                       |
| 14 Monday        | Meeting of Faculty of Arts. Register opens for Students in Medicine.                                                                                                  |
| 15 Tuesday       | Matriculation and Supplemental Examinations (Classics), Exhibition and Scholarship Examinations begin.                                                                |
| 16 Wednesday     | Ex'ns contin'd. (Mathematics).                                                                                                                                        |
| 17 Thursday      | Ex'ns cont'd. (English, Logic, Chemistry and Philosophy.)                                                                                                             |
| 18 Friday        | Examinations continued. (Modern Languages and Natural Science.                                                                                                        |
| 19 Saturday      |                                                                                                                                                                       |
| 20 <b>SUNDAY</b> |                                                                                                                                                                       |
| 21 Monday        | Exhib. and Sch. Ex'ns continued. Lectures in Arts and App. Sc. begin. Mtgs. Fac. Arts and App. Sc. Summer Essays in Applied Science. Lectures begin for Stud. in Med. |
| 22 Tuesday       |                                                                                                                                                                       |
| 23 Wednesday     |                                                                                                                                                                       |
| 24 Thursday      |                                                                                                                                                                       |
| 25 Friday        | Meeting of Faculty of Arts.                                                                                                                                           |
| 26 Saturday      | Meeting of Governors. Matriculation in Vet. Science.                                                                                                                  |
| 27 <b>SUNDAY</b> |                                                                                                                                                                       |
| 28 Monday        |                                                                                                                                                                       |
| 29 Tuesday       | Introductory Lecture Faculty of Vet. Science.                                                                                                                         |
| 30 Wednesday     |                                                                                                                                                                       |

## 11 SUNDAY

|                  |                                              |
|------------------|----------------------------------------------|
| 2 Monday         | Meeting of Faculty of App. Sc.               |
| 3 Tuesday        |                                              |
| 4 Wednesday      | Meeting of Normal School Com.                |
| 5 Thursday       |                                              |
| 6 Friday         | Meeting of Faculty of Arts. Law Examinations |
| 7 Saturday       | Meeting of Medical Faculty.                  |
| 8 <b>SUNDAY</b>  |                                              |
| 9 Monday         |                                              |
| 10 Tuesday       |                                              |
| 11 Wednesday     |                                              |
| 12 Thursday      | Meeting of Estate Committee.                 |
| 13 Friday        |                                              |
| 14 Saturday      |                                              |
| 15 <b>SUNDAY</b> |                                              |
| 16 Monday        |                                              |
| 17 Tuesday       |                                              |
| 18 Wednesday     |                                              |
| 19 Thursday      |                                              |
| 20 Friday        | Meeting of Faculty of Arts.                  |
| 21 Saturday      |                                              |

## 22 SUNDAY

|                  |                       |
|------------------|-----------------------|
| 23 Monday        |                       |
| 24 Tuesday       |                       |
| 25 Wednesday     |                       |
| 26 Thursday      |                       |
| 27 Friday        |                       |
| 28 Saturday      | Meeting of Governors. |
| 29 <b>SUNDAY</b> |                       |
| 30 Monday        |                       |

## OCTOBER, 1896.

## DECEMBER, 1896.

|                  |                                                                                                                  |
|------------------|------------------------------------------------------------------------------------------------------------------|
| 1 Thursday       | Session of Veterinary Faculty begins. Introductory Lecture Faculty of Medicine. Meeting of Fac. of App. Science. |
| 2 Friday         | Meeting of Medical Faculty.                                                                                      |
| 3 Saturday       |                                                                                                                  |
| 4 <b>SUNDAY</b>  |                                                                                                                  |
| 5 Monday         | Founder's Birthday.                                                                                              |
| 6 Tuesday        | The Wm. Molson Hall opened, 1862.                                                                                |
| 7 Wednesday      | Meeting of Normal Sch. Com.                                                                                      |
| 8 Thursday       | Meeting of Estate Committee.                                                                                     |
| 9 Friday         | Meeting of Faculty of Arts.                                                                                      |
| 10 Saturday      |                                                                                                                  |
| 11 <b>SUNDAY</b> |                                                                                                                  |
| 12 Monday        |                                                                                                                  |
| 13 Tuesday       |                                                                                                                  |
| 14 Wednesday     |                                                                                                                  |
| 15 Thursday      | Physics Building Committee. University Athletic Sports.                                                          |
| 16 Friday        | Law Examinations.                                                                                                |
| 17 Saturday      |                                                                                                                  |
| 18 <b>SUNDAY</b> |                                                                                                                  |
| 19 Monday        |                                                                                                                  |
| 20 Tuesday       |                                                                                                                  |
| 21 Wednesday     |                                                                                                                  |
| 22 Thursday      |                                                                                                                  |
| 23 Friday        | Meeting of Faculty of Arts.                                                                                      |
| 24 Saturday      | Meeting of Governors. Law Examinations. Register closes for Stud. in Medicine.                                   |
| 25 <b>SUNDAY</b> | Meeting of Museum and Library Committees.                                                                        |
| 26 Monday        | Regular Meeting of Corporation.                                                                                  |
| 27 Tuesday       | Reps. Schol. and Exhibitions.                                                                                    |
| 28 Wednesday     | Accounts audited.                                                                                                |
| 29 Thursday      | New Library opened 1893.                                                                                         |
| 30 Friday        |                                                                                                                  |
| 31 Saturday      |                                                                                                                  |

|                  |                                                                  |
|------------------|------------------------------------------------------------------|
| 1 Tuesday        |                                                                  |
| 2 Wednesday      | Meeting of Normal Sch. Com.                                      |
| 3 Thursday       |                                                                  |
| 4 Friday         | Meeting of Faculty of Arts.                                      |
| 5 Saturday       | Meeting of Medical Faculty.                                      |
| 6 <b>SUNDAY</b>  |                                                                  |
| 7 Monday         | Meeting of Faculty of App. Sc.                                   |
| 8 Tuesday        |                                                                  |
| 9 Wednesday      |                                                                  |
| 10 Thursday      | Meeting of Estate Committee. Lectures in Arts and App. Sc. end.  |
| 11 Friday        | Law Examinations.                                                |
| 12 Saturday      |                                                                  |
| 13 <b>SUNDAY</b> |                                                                  |
| 14 Monday        | Christmas Ex. in Arts and Applied Science begin.                 |
| 15 Tuesday       | Law Examinations                                                 |
| 16 Wednesday     |                                                                  |
| 17 Thursday      |                                                                  |
| 18 Friday        |                                                                  |
| 19 Saturday      | Meeting of Governors.                                            |
| 20 <b>SUNDAY</b> |                                                                  |
| 21 Monday        |                                                                  |
| 22 Tuesday       | Christmas Vacation begins. Autumn term ends Faculty of Medicine. |
| 23 Wednesday     |                                                                  |
| 24 Thursday      |                                                                  |
| 25 Friday        |                                                                  |
| 26 Saturday      | Christmas-Day.                                                   |
| 27 <b>SUNDAY</b> |                                                                  |
| 28 Monday        |                                                                  |
| 29 Tuesday       |                                                                  |
| 30 Wednesday     |                                                                  |
| 31 Thursday      |                                                                  |

NOTE.—Meetings of the Faculty of Arts are held at 5 P. M. unless otherwise specified.

# JANUARY, 1897.

|              |                                                                               |
|--------------|-------------------------------------------------------------------------------|
| 1 Friday     |                                                                               |
| 2 Saturday   | Meeting of Medical Faculty.                                                   |
| 3 SUNDAY     |                                                                               |
| 4 Monday     | Christmas Vacation ends. Lectures in Law begin.                               |
| 5 Tuesday    | Lectures in Arts, Med. and App. Science resumed.                              |
| 6 Wednesday  | Meetings of Facs. of Arts and App. Science.                                   |
| 7 Thursday   | Meeting of Normal Sch. Com.                                                   |
| 8 Friday     |                                                                               |
| 9 Saturday   |                                                                               |
| 10 SUNDAY    |                                                                               |
| 11 Monday    |                                                                               |
| 12 Tuesday   |                                                                               |
| 13 Wednesday |                                                                               |
| 14 Thursday  | Meeting of Estate Committee.                                                  |
| 15 Friday    | Meeting of Faculty of Arts.                                                   |
| 16 Saturday  |                                                                               |
| 17 SUNDAY    |                                                                               |
| 18 Monday    |                                                                               |
| 19 Tuesday   |                                                                               |
| 20 Wednesday |                                                                               |
| 21 Thursday  | Physics Building Committee.                                                   |
| 22 Friday    |                                                                               |
| 23 Saturday  | Meeting of Governors.                                                         |
| 24 SUNDAY    |                                                                               |
| 25 Monday    | Meeting of Museum and Library Committees.                                     |
| 26 Tuesday   |                                                                               |
| 27 Wednesday | Regular Meet'g of Corporation. Examiners appointed. Annual Report to Visitor. |
| 28 Thursday  |                                                                               |
| 29 Friday    | Meeting of Fac. of Arts.                                                      |
| 30 Saturday  | Theses for M.A. and LL.D. to be sent in.                                      |
| 31 SUNDAY    |                                                                               |

# FEBRUARY, 1897.

|              |                                                  |
|--------------|--------------------------------------------------|
| 1 Monday     | Meeting of Fac. App. Science.                    |
| 2 Tuesday    |                                                  |
| 3 Wednesday  | Meeting of Normal Sch. Com.                      |
| 4 Thursday   |                                                  |
| 5 Friday     |                                                  |
| 6 Saturday   | Law Examinations.                                |
| 7 SUNDAY     | Meeting of Medical Faculty.                      |
| 8 Monday     |                                                  |
| 9 Tuesday    |                                                  |
| 10 Wednesday |                                                  |
| 11 Thursday  | Meeting of Estate Committee.                     |
| 12 Friday    | Meeting of Faculty of Arts.                      |
| 13 Saturday  | Law Examinations.                                |
| 14 SUNDAY    |                                                  |
| 15 Monday    |                                                  |
| 16 Tuesday   |                                                  |
| 17 Wednesday |                                                  |
| 18 Thursday  |                                                  |
| 19 Friday    | Supplemental Exam's in Arts and Applied Science. |
| 20 Saturday  | Law Examinations.                                |
| 21 SUNDAY    |                                                  |
| 22 Monday    |                                                  |
| 23 Tuesday   |                                                  |
| 24 Wednesday |                                                  |
| 25 Thursday  | Physics & Engineering Building opened 1893.      |
| 26 Friday    | Meeting of Faculty of Arts.                      |
| 27 Saturday  | Meeting of Governors.                            |
| 28 SUNDAY    |                                                  |

# MARCH, 1897.

|              |                                                             |
|--------------|-------------------------------------------------------------|
| 1 Monday     | Theses for B.C.L.                                           |
| 2 Tuesday    | Meeting of Fac. Ap. Science.                                |
| 3 Wednesday  | No lectures.                                                |
| 4 Thursday   | Meeting of Normal Sch. Com.                                 |
| 5 Friday     |                                                             |
| 6 Saturday   | Meeting of Medical Faculty.                                 |
| 7 SUNDAY     |                                                             |
| 8 Monday     |                                                             |
| 9 Tuesday    |                                                             |
| 10 Wednesday |                                                             |
| 11 Thursday  | Meeting of Estate Committee.                                |
| 12 Friday    | Meeting of Faculty of Arts.                                 |
| 13 Saturday  | Law Examinations.                                           |
| 14 SUNDAY    |                                                             |
| 15 Monday    | Exam's in Med. begin. Meeting of Fac. of Ap. Science.       |
| 16 Tuesday   |                                                             |
| 17 Wednesday |                                                             |
| 18 Thursday  |                                                             |
| 19 Friday    | Meeting of Faculty of Arts. Reports of Attendance on Lects. |
| 20 Saturday  | Law Examinations.                                           |
| 21 SUNDAY    |                                                             |
| 22 Monday    |                                                             |
| 23 Tuesday   |                                                             |
| 24 Wednesday |                                                             |
| 25 Thursday  |                                                             |
| 26 Friday    | Conv. for Degrees in Veterinary Science. Winter term ends.  |
| 27 Saturday  | Faculty of Medicine.                                        |
| 28 SUNDAY    | Meeting of Governors.                                       |
| 29 Monday    |                                                             |
| 30 Tuesday   | Lects. in Arts and Ap. Sc. end.                             |
| 31 Wednesday | Meeting of Fac. of App. Sc.                                 |

# APRIL, 1897.

|              |                                                                  |
|--------------|------------------------------------------------------------------|
| 1 Thursday   | Convocation for Degrees in Medicine. Examinations in Arts begin. |
| 2 Friday     | Meeting of Medical Faculty.                                      |
| 3 Saturday   |                                                                  |
| 4 SUNDAY     |                                                                  |
| 5 Monday     | Examinations in Science.                                         |
| 6 Tuesday    |                                                                  |
| 7 Wednesday  | Meeting of Normal Sc. Com.                                       |
| 8 Thursday   | Meeting of Estate Committee.                                     |
| 9 Friday     | Meeting of Faculty of Arts.                                      |
| 10 Saturday  | Examinations in Law.                                             |
| 11 SUNDAY    |                                                                  |
| 12 Monday    |                                                                  |
| 13 Tuesday   | Spring term begins Faculty of Medicine.                          |
| 14 Wednesday |                                                                  |
| 15 Thursday  |                                                                  |
| 16 Friday    | Good Friday.                                                     |
| 17 Saturday  | Easter vacation begins.                                          |
| 18 SUNDAY    | Examinations in Law.                                             |
| 19 Monday    | Easter.                                                          |
| 20 Tuesday   | Law Examinations.                                                |
| 21 Wednesday | Easter vacation ends.                                            |
| 22 Thursday  | Law Examinations.                                                |
| 23 Friday    | Law Examinations.                                                |
| 24 Saturday  |                                                                  |
| 25 SUNDAY    |                                                                  |
| 26 Monday    | Physics Building Committee.                                      |
| 27 Tuesday   | Meeting of Governors.                                            |
| 28 Wednesday |                                                                  |
| 29 Thursday  | Meeting of Museum and Library Committees.                        |
| 30 Friday    | Regular meeting of Corporation.                                  |
| 31 Saturday  | Convocation for Degrees in Arts and Applied Science.             |

**MAY, 1897.**

**JULY, 1897.**

|                  |                                                                                  |
|------------------|----------------------------------------------------------------------------------|
| 1 Saturday       | Meeting of Examiners for Sch. Examinations. Examinations in Normal School begin. |
| <b>2 SUNDAY</b>  | Meeting of Medical Faculty.                                                      |
| 3 Monday         |                                                                                  |
| 4 Tuesday        |                                                                                  |
| 5 Wednesday      | Meeting of Normal Sch. Com.                                                      |
| 6 Thursday       |                                                                                  |
| 7 Friday         |                                                                                  |
| 8 Saturday       |                                                                                  |
| <b>9 SUNDAY</b>  |                                                                                  |
| 10 Monday        |                                                                                  |
| 11 Tuesday       |                                                                                  |
| 12 Wednesday     |                                                                                  |
| 13 Thursday      | Meeting of Estate Committee.                                                     |
| 14 Friday        |                                                                                  |
| 15 Saturday      |                                                                                  |
| <b>16 SUNDAY</b> |                                                                                  |
| 17 Monday        |                                                                                  |
| 18 Tuesday       |                                                                                  |
| 19 Wednesday     |                                                                                  |
| 20 Thursday      |                                                                                  |
| 21 Friday        |                                                                                  |
| 22 Saturday      |                                                                                  |
| <b>23 SUNDAY</b> |                                                                                  |
| 24 Monday        | Queen's Birthday.                                                                |
| 25 Tuesday       |                                                                                  |
| 26 Wednesday     | Normal Sch. closes for Summer Vacation.                                          |
| 27 Thursday      |                                                                                  |
| 28 Friday        | Lectures end Fac. of Medicine.                                                   |
| 29 Saturday      | Meeting of Governors.                                                            |
| <b>30 SUNDAY</b> |                                                                                  |
| 31 Monday        |                                                                                  |

|                  |                             |
|------------------|-----------------------------|
| 1 Thursday       |                             |
| 2 Friday         |                             |
| 3 Saturday       | Meeting of Medical Faculty. |
| <b>4 SUNDAY</b>  |                             |
| 5 Monday         |                             |
| 6 Tuesday        |                             |
| 7 Wednesday      |                             |
| 8 Thursday       |                             |
| 9 Friday         |                             |
| 10 Saturday      |                             |
| <b>11 SUNDAY</b> |                             |
| 12 Monday        |                             |
| 13 Tuesday       |                             |
| 14 Wednesday     |                             |
| 15 Thursday      |                             |
| 16 Friday        |                             |
| 17 Saturday      |                             |
| <b>18 SUNDAY</b> |                             |
| 19 Monday        |                             |
| 20 Tuesday       |                             |
| 21 Wednesday     |                             |
| 22 Thursday      |                             |
| 23 Friday        |                             |
| 24 Saturday      |                             |
| <b>25 SUNDAY</b> |                             |
| 26 Monday        |                             |
| 27 Tuesday       |                             |
| 28 Wednesday     |                             |
| 29 Thursday      |                             |
| 30 Friday        |                             |
| 31 Saturday      |                             |

**JUNE, 1897.**

**AUGUST, 1897.**

|                  |                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------|
| 1 Tuesday        | Examinations begin Faculty of Medicine. Examinations for Matriculation and Associate in Arts begin. |
| 2 Wednesday      |                                                                                                     |
| 3 Thursday       | Meeting of Normal Sch. Com.                                                                         |
| 4 Friday         |                                                                                                     |
| 5 Saturday       | Meeting of Medical Faculty.                                                                         |
| <b>6 SUNDAY</b>  | Whit Sunday.                                                                                        |
| 7 Monday         |                                                                                                     |
| 8 Tuesday        |                                                                                                     |
| 9 Wednesday      |                                                                                                     |
| 10 Thursday      | Meeting of Estate Committee.                                                                        |
| 11 Friday        | Physics Building Committee.                                                                         |
| 12 Saturday      |                                                                                                     |
| <b>13 SUNDAY</b> | Trinity Sunday.                                                                                     |
| 14 Monday        |                                                                                                     |
| 15 Tuesday       |                                                                                                     |
| 16 Wednesday     |                                                                                                     |
| 17 Thursday      |                                                                                                     |
| 18 Friday        | Spring Term ends Faculty of Medicine.                                                               |
| 19 Saturday      |                                                                                                     |
| <b>20 SUNDAY</b> |                                                                                                     |
| 21 Monday        | Meeting of Museum and Library Committees.                                                           |
| 22 Tuesday       | Regular Meeting of Corporat'n.                                                                      |
| 23 Wednesday     | Report of Normal School.                                                                            |
| 24 Thursday      |                                                                                                     |
| 25 Friday        |                                                                                                     |
| 26 Saturday      | Meeting of Governors.                                                                               |
| <b>27 SUNDAY</b> |                                                                                                     |
| 28 Monday        |                                                                                                     |
| 29 Tuesday       |                                                                                                     |
| 30 Wednesday     |                                                                                                     |

|                  |  |
|------------------|--|
| <b>1 SUNDAY</b>  |  |
| 2 Monday         |  |
| 3 Tuesday        |  |
| 4 Wednesday      |  |
| 5 Thursday       |  |
| 6 Friday         |  |
| 7 Saturday       |  |
| <b>8 SUNDAY</b>  |  |
| 9 Monday         |  |
| 10 Tuesday       |  |
| 11 Wednesday     |  |
| 12 Thursday      |  |
| 13 Friday        |  |
| 14 Saturday      |  |
| <b>15 SUNDAY</b> |  |
| 16 Monday        |  |
| 17 Tuesday       |  |
| 18 Wednesday     |  |
| 19 Thursday      |  |
| 20 Friday        |  |
| 21 Saturday      |  |
| <b>22 SUNDAY</b> |  |
| 23 Monday        |  |
| 24 Tuesday       |  |
| 25 Wednesday     |  |
| 26 Thursday      |  |
| 27 Friday        |  |
| 28 Saturday      |  |
| <b>29 SUNDAY</b> |  |
| 30 Monday        |  |
| 31 Tuesday       |  |

Peter Redpath Museum opened 1882.



# **FACULTY OF ARTS.**

*EXHIBITION, SCHOLARSHIP, &c., EXAMINATIONS,  
SEPTEMBER, 1896.*

| DAY        | DATE | FIRST YEAR                       | SECOND YEAR.                  | THIRD YEAR.           | Hour.   |
|------------|------|----------------------------------|-------------------------------|-----------------------|---------|
| Tuesday.   | 15   | Greek.                           | Greek.                        | Greek.                | 9 to 12 |
| "          | 15   | Latin.                           | Latin.                        | Latin Prose Comp.     | 2 to 5  |
| "          | 15   |                                  |                               | Mathematics.          | 9 to 12 |
| Wednesday. | 16   | Mathematics.                     | Mathematics.                  | Latin.                | 9 to 12 |
| "          | 16   |                                  |                               | Mathematics.          | 9 to 12 |
| "          | 16   |                                  |                               | Botany.               | 9 to 12 |
| "          | 16   | Mathematics.                     | Mathematics.                  | Ancient History.      | 2 to 5  |
| "          | 16   |                                  |                               | Botany.               | 2 to 5  |
| Thursday.  | 17   | English.                         | English.                      | English.              | 9 to 12 |
| "          | 17   |                                  |                               | Logic.                | 9 to 12 |
| "          | 17   | English.                         |                               | English.              | 2 to 5  |
| "          | 17   |                                  | Chemistry.                    | Chemistry.            | 2 to 5  |
| Friday.    | 18   |                                  |                               | Mathematics.          | 9 to 12 |
| "          | 18   |                                  |                               | Botany.               | 9 to 12 |
| "          | 18   |                                  | French.                       | French.               | 9 to 12 |
| "          | 18   | Grammar and Comp.<br>(Classics.) | General Paper.<br>(Classics.) | English Composition   | 2 to 5  |
| Monday.    | 21   | German.<br>(Donalda Dt.)         | Mathematics.                  | Mathematics.          | 9 to 12 |
|            |      |                                  | English.                      | German.<br>(Donalda.) | 2 to 5  |
|            |      |                                  | German.                       |                       |         |

## *CHRISTMAS EXAMINATIONS. DECEMBER, 1896.*

| DAY.       | DATE | FIRST YEAR.  | SECOND YEAR.      | THIRD YEAR.       | FOURTH YEAR.     |
|------------|------|--------------|-------------------|-------------------|------------------|
| Monday.    | 14   | Latin.       | Latin.            | Mechanics.        | Astronomy.       |
| "          | 14   |              | Mathematics, P.M. |                   |                  |
| Tuesday.   | 15   | Greek.       |                   | Greek.            | Greek.           |
| "          | 15   |              |                   | Zoology, P.M.     | Latin, P.M.      |
| Wednesday. | 16   | Mathematics. | Psychology.       | Latin.            | Moral Philosophy |
| "          | 16   | French, P.M. | French, P.M.      | Ment. Phil., P.M. | Geology, P.M.    |
| Thursday.  | 17   | Chemistry.   | Botany.           |                   |                  |
| "          | 17   | German, P.M. | German, P.M.      |                   |                  |
| "          | 17   | Hebrew, P.M. | Hebrew, P.M.      |                   |                  |
| Friday.    | 18   | English.     |                   |                   |                  |

# FACULTY OF ARTS.

SESSIONAL AND HONOUR EXAMINATIONS. APRIL, 1897

| DATE.     | FIRST YEAR.                                                        |               | SECOND YEAR.                                                       |      | THIRD YEAR.                     |      | FOURTH YEAR.                      |      |
|-----------|--------------------------------------------------------------------|---------------|--------------------------------------------------------------------|------|---------------------------------|------|-----------------------------------|------|
|           | A.M.                                                               | P.M.          | A.M.                                                               | P.M. | A.M.                            | P.M. | A.M.                              | P.M. |
| 1 Thurs.  | Hebrew .....                                                       |               | Hebrew, Mod. History                                               |      | Hebrew .....                    |      | Hebrew and B.A. Honours.          |      |
| 2 Fri.    | Greek .....                                                        |               | Greek .....                                                        |      | Mechanics .....                 |      | Ethics. Ethics.                   |      |
| 3 Sat.    |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 5 Mon.    | Latin ... Anc. History                                             |               | Latin. Composition.                                                |      | Latin .....                     |      | Latin. Latin.                     |      |
| 6 Tues.   |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 7 Wed.    | English .....                                                      | English ..... |                                                                    |      | Ex. Phy- English. sics .....    |      | Ex. Phy- History. sics.           |      |
| 8 Thurs.  |                                                                    |               |                                                                    |      | Botany .....                    |      | Botany.                           |      |
| 9 Fri.    | Geometry and Arithmetic .....                                      |               | Mathematics .....                                                  |      | Greek .....                     |      | Mechanics and B.A. Honours.       |      |
| 10 Sat.   |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 12 Mon.   | Trigonometry and Algebra .....                                     |               | Mathematics .....                                                  |      | Astronomy and Optics .....      |      | Astr'y. and Optics. B.A. Honours. |      |
| 13 Tues.  | French. German.                                                    |               | French. German.                                                    |      | Metaphysics .....               |      | Geology. Geology                  |      |
| 14 Wed.   | Chemistry .....                                                    |               | Logic .....                                                        |      | Zoology .....                   |      | Greek. History.                   |      |
| 15 Thurs. |                                                                    |               | Botany .....                                                       |      | French. ... German.             |      | French. German. B.A. Honours.     |      |
| 16 Fri.   | Good Friday. Easter                                                |               | vacation begins .....                                              |      |                                 |      |                                   |      |
| 17 Sat.   |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 18 Sun.   | Easter Day .....                                                   |               |                                                                    |      |                                 |      |                                   |      |
| 19 Mon.   |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 20 Tues.  | Easter vacation ends.                                              |               |                                                                    |      |                                 |      |                                   |      |
| 21 Wed.   | Honour Examinations Meeting of Examiners and Faculty at 9.30 A. M. |               | Honour Examinations Meeting of Examiners and Faculty at 9.30 A. M. |      | Honour Exam'tions at 9.30 A. M. |      | B.A. Honours.                     |      |
| 22 Thurs. |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 23 Fri.   | Honour Examinations Meeting of Examiners and Faculty at 9.30 A.M.  |               | Honour Examinations Meeting of Examiners and Faculty at 9.30 A.M.  |      | Honour Exam'tions at 9.30 A.M.  |      | B. A. Honours.                    |      |
| 24 Sat.   |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 25 Sun.   |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 26 Mon.   | Meeting of Examiner s and Faculty at 9.30 A.M.                     |               |                                                                    |      | Declaration of results.         |      |                                   |      |
| 27 Tues.  |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 28 Wed.   | Regular Meeting of C orporation .....                              |               |                                                                    |      |                                 |      |                                   |      |
| 29 Thurs. |                                                                    |               |                                                                    |      |                                 |      |                                   |      |
| 30 Fri.   | Convocation for Degr ees in Arts.                                  |               |                                                                    |      |                                 |      |                                   |      |

The Examinations begin at 9 A.M. and 2 P.M., when not specified otherwise.

# FACULTY OF APPLIED SCIENCE.

## SESSIONAL EXAMINATIONS, APRIL, 1897.

| DAYS.     | FIRST YEAR.                  | SECOND YEAR.                             | THIRD YEAR.                       | FOURTH YEAR.                           |
|-----------|------------------------------|------------------------------------------|-----------------------------------|----------------------------------------|
| April.    |                              |                                          |                                   |                                        |
| 1 Thurs.  | .....                        | .....                                    | .....                             | .....                                  |
| 2 Fri.    | .....                        | .....                                    | .....                             | .....                                  |
| 3 Sat.    | .....                        | .....                                    | .....                             | .....                                  |
| 4 Sun.    | .....                        | .....                                    | .....                             | .....                                  |
| 5 Mon.    | Geom. Drawing.               | Desc. Geometry.                          | Theory of Structures.             | { Theory of Struct.<br>Chemistry.      |
| 6 Tues.   | Mathematics.                 | Chemistry.                               | { Chemistry.<br>Machine Design.   | { Assaying.<br>Dyn. of Machinery.      |
| 7 Wed.    | English.                     | Exp. Physics.                            | Exp. Physics.                     | { Mechl. Engin.<br>Geodesy.            |
| 8 Thurs.  | Math. Lab.                   | Surveying.                               | Surveying.                        | { Theory of Struct.<br>Geology (Adv.). |
| 9 Fri.    | Desc. Geometry.              | Chemistry.                               | Theory of Structures              | { Theory of Struct.<br>Elect. Engin.   |
| 10 Sat.   | Pract. Chem. (1)             | Kinematics.                              | Desc. Geom.                       | { Chemistry.<br>Mechl. Engin. Lab.     |
| 11 Sun.   | .....                        | .....                                    | .....                             | .....                                  |
| 12 Mon.   | Mathematics.                 | Mathematics.                             | { Elect. Engin.<br>Org. Chemistry | { Elect. Engin.<br>Org. Chemistry.     |
| 13 Tues.  | { French a.m.<br>German p.m. | { French a.m.<br>German p.m.             | { Geology.<br>Mining.             | { Hydraulics.                          |
| 14 Wed.   | Pract. Chem. (2)             | Zoology a.m.                             | Dyn. of Mach.<br>Mechl. Drawing.  | Machine Design.                        |
| 15 Thurs. | Chemistry.                   | { Botany a.m.<br>Mechl. Drawing.<br>a.m. | { a.m.<br>Phys. Lab. Wk.<br>p.m.  | Phys. Lab. Wk. p.m.                    |
| 16 Fri.   | Good Friday.                 | .....                                    | .....                             | .....                                  |
| 17 Sat.   | Pract. Chem. (1)             | .....                                    | .....                             | .....                                  |
| 18 Sun.   | .....                        | .....                                    | .....                             | .....                                  |
| 19 Mon.   | Mathematics.                 | Mathematics.                             | Railway Engin.                    | { Metallurgy.<br>Railway Engin.        |
| 20 Tues.  | .....                        | .....                                    | Mathematics.                      | Municipal Engin.                       |
| 21 Wed.   | .....                        | .....                                    | Mineralogy (Adv.).                | .....                                  |
| 22 Thurs. | .....                        | .....                                    | .....                             | .....                                  |
| 23 Fri.   | .....                        | .....                                    | Mineralogy (Adv.).                | .....                                  |
| 24 Sat.   | .....                        | .....                                    | .....                             | .....                                  |
| 25 Sun.   | .....                        | .....                                    | .....                             | .....                                  |
| 26 Mon.   | .....                        | .....                                    | .....                             | .....                                  |
| 27 Tues.  | .....                        | .....                                    | .....                             | .....                                  |
| 28 Wed.   | .....                        | .....                                    | .....                             | .....                                  |
| 29 Thurs. | .....                        | .....                                    | .....                             | .....                                  |
| 30 Fri.   | Convocation.                 | .....                                    | .....                             | .....                                  |

N.B.—The examinations for the year 1896-97, and for 1897-98, will not be held on the above dates.



# FACULTY OF ARTS.

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# Faculty of Arts.

## Part First.

SIR J. W. DAWSON, LL.D., Emeritus Principal, and Emeritus Professor in the Faculty of Arts.

### I. OFFICERS OF INSTRUCTION.

#### PROFESSORS.

- WM. PETERSON, M.A., LL.D., Principal, and Professor of Classics.  
ALEXANDER JOHNSON, M.A., LL.D., D.C.L., Vice-Principal, Dean of the Faculty of Arts, and Professor of Mathematics.  
REV. J. CLARK MURRAY, LL.D., Professor of Mental and Moral Philosophy.  
BERNARD J. HARRINGTON, M.A., Ph.D., Professor of Chemistry and Mineralogy.  
CHARLES E. MOYSE, B.A., Professor of the English Language and Literature.  
D. P. PENHALLOW, B.Sc., M.A.Sc., Professor of Botany.  
REV. DANIEL COUSSIRAT, B.A., D.D., O.A., Professor of Hebrew and Oriental Literature.  
JOHN COX, M.A., Professor of Physics.  
A. JUDSON EATON, M.A., Ph.D., Associate Professor of Classics.  
FRANK D. ADAMS, M.A.Sc., Ph.D., Professor of Geology and Paleontology.  
HUGH L. CALLENDAR, M.A., Professor of Physics.  
C. W. COLBY, M.A., Ph.D., Professor of History.

#### LECTURERS.

- PAUL T. LAFLEUR, M.A., Lecturer in Logic and English.  
LEIGH R. GREGOR, B.A., Lecturer in the German Language and Literature.  
W. E. DEEKS, B.A., M.D., Lecturer in Zoology.  
MAXIME INGRES, Lecturer in French.

*(The above Professors and Lecturers constitute the Faculty.)*

#### OTHER OFFICERS OF INSTRUCTION.

- C. H. MCLEOD, Ma. E., Professor of Surveying and Geology.  
NEVIL NORTON EVANS, M.A.Sc., Lecturer in Chemistry.  
..... Lecturer in Classics.  
REV. H. M. TORY, M.A., Lecturer in Mathematics, and Demonstrator in Physics.  
REV. J. L. MORIN, M.A., Sessional Lecturer in French.  
C. M. DERICK, M.A., Demonstrator in Botany.  
F. H. PITCHER, B.A.Sc., Demonstrator in Physics.  
ALEX. BRODIE, B.A.Sc., Demonstrator in Chemistry.  
HOWARD T. BARNES, M.A.Sc., Demonstrator in Physics.  
J. P. STEPHEN, Instructor in Elocution.  
A. TAIT MACKENZIE, B.A., M.D., Instructor in Physical Culture.



## II. COURSES OF LECTURES.

### Classical Literature and History.

Professor:—W. Peterson, M.A., LL. D.

Associate Professor:—A. J. Eaton, M.A., Ph.D.

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Lecturer:—

In this department, the work of the first two years is divided mainly between exercise in Grammar and Composition and the reading of selected authors. The attention of the student is at the same time directed to the collateral subjects of History, Literature, Antiquities, and Geography, in connection with which various text-books are recommended, as specified below.\*

In the Third and Fourth Years (as also in the Honour Courses) the instruction takes more of the lecture form, and an attempt is made to give a connected view of the leading branches of ancient literature and the most important phases of ancient life and thought.

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### Greek.

#### Ordinary.

##### First Year.

1. In this class, besides a review of grammatical principles (Sonnenschein's Greek Grammar, Accidence: Parallel Grammar Series), portions of some Greek authors—*e.g.*, XENOPHON, HOMER, HERODOTUS, LUCIAN and EURIPIDES—are read and explained.

For 1896-97 the work will be Farnell's Tales from Herodotus (Macmillan's Elementary Classics): HOMER, Iliad, Book XXIV (Leaf and Bayfield: Macmillan): and Sidgwick's Scenes from the Hecuba of Euripides (Longmans).

For *Composition*, the manual used will be Sidgwick's First Greek Writer (Longmans); for *Translation at Sight*, written and oral, Jerram's Anglice Reddenda, First Series (Clarendon Press).

SUMMER READINGS.—XENOPHON, Easy Selections (Phillpotts and Jerram: Clarendon Press). *History*—from B.C. 560 to 479, Cox's Greeks and Persians (Longmans' Epoch Series). *Literature*—the Outlines of the Homeric Controversy (Jebb's Introduction to Homer: Macle hose) and the Lyric Poets.

##### Second Year.

2. The work of the Second Year will be selected from the Greek Dramatists, and from THUCYDIDES, PLATO or DEMOSTHENES.

Subjects for 1896-97—THUCYDIDES (Moore's Easy Selections, Longmans), and SOPHOCLES, Ajax (Campbell & Abbott, Clarendon Press: or Jebb). The practice of *Composition* and *Translation at Sight* will be continued as before.

\*It is intended to make additional appointments in the Classical Department in order to overtake the programme of work here laid down.

33 SUMMER READINGS will also be suggested in the various branches of class-work; and it is hoped that these, though voluntary and not prescribed as part of the regular curriculum, will be undertaken by all students in the department during their long vacation, except by those who take the special work prescribed for Exhibitions.

SUMMER READINGS.—PLATO, *Apology* (Adam, Cambridge Press); *History*—From the Fall of Athens to the Battle of Chaeronea (Sankey's Spartan and Theban Supremacies, Longmans). *Literature*.—The Origin and Growth of the Drama, the Historians and Orators.

The following books are recommended for general use during the first two years of the course:—Jebb's *Primer of Greek Literature* (Macmillan), supplemented by readings in Jevons or Mahaffy; Oman's *History of Greece* (Percival); Mahaffy's *Primer of Greek Antiquities*; and Tozer's *Primer of Classical Geography* (Macmillan).

Students should provide themselves also with Kiepert's *Atlas Antiquus*.

3. Subjects for 1896-97:—ISOCRATES, *Panegyricus* (Sandys, Rivingtons). ARISTOPHANES, *Plutus* (Green, Cambridge Press). Selected extracts will be prescribed for *Composition*; for *Translation at Sight* the manual will be Fox & Bromley's *Models and Exercises* (Clarendon Press).

Third  
Year.

SUMMER READINGS.—Pratt and Leaf's *Homer* (The Story of Achilles: Macmillan's Classical Series).

4. Subjects for 1896-7. PLUTARCH, *Life of Demosthenes* (Holden, Macmillan); ÆSCHYLUS, *Persæ* (Pickard, Macmillan). *Composition* and *Translation at Sight* as in the Third Year.

Fourth  
Year.

The following books are recommended for general use: Gow's *Companion to School Classics* (Macmillan); Jebb's *Growth and Influence of Classical Greek Poetry* (Macmillan); Campbell's *Guide to Greek Tragedy* (Percival); Butler's *Demosthenes* (Classical Writers Series); Abbott's *Pericles* (Putnam); Jevons or Mahaffy's *History of Greek Literature*; Kiepert's *Manual of Ancient Geography* (Macmillan).

Honours.

5. The books selected for class reading during session 1896-97 are the following:—HOMER, *Odyssey I and VI* (Merry: Clarendon Press); THUCYDIDES, *Book VIII* (Tucker, Macmillan); ÆSCHYLUS, *Prometheus* (Pickard, Clarendon Press); EURIPIDES, *Alcestis* (Earle, Macmillan); PLATO, *Gorgias* (Thompson, Bell).

Third  
Year.

For practice in *Composition*, written and oral, the manual used will be Sidgwick's *Introduction to Greek Prose Composition*; for *Translation at Sight*, Fox & Bromley's *Models and Exercises* (Clarendon Press). In *History* the examination will be directed to testing a general knowledge of the course of Greek History to the death of Alexander, and a more minute knowledge of the development of the Athenian Constitution and the period of Athenian Supremacy. In *Literature*, a general knowledge will be expected of the course of Greek literature, and a more minute knowledge of the lives and writings of the authors prescribed.

6. In this class students will be expected to overtake a comprehensive programme of reading, such as the following, in whole or in part:—HOMER, *Iliad*, Selections from Books I-VI\* (Leaf and Bayfield, Macmillan); *Lyric Poets* (Tyler's Selections, Ginn & Co., or Hiller's *Anthologia Lyrica*, Teubner); PINDAR

Fourth  
Year.

\* An asterisk is affixed to the books which will be left to the student's private reading, with help and direction from the Professor.

(Seymour's Selected Odes, Ginn & Co.); HERODOTUS VII (Butler, Macmillan); THUCYDIDES, Book I (Forbes, Clarendon Press); ÆSCHYLUS, Agamemnon (Sidgwick, Clarendon Press); SOPHOCLES, Antigone and Philoctetes\* (Jebb, Cambridge Press); ARISTOPHANES, Frogs (Merry, Clarendon Press); PLATO, (Purves's Selections, Clarendon Press); ATTIC ORATORS, (Jebb's Selections, Macmillan); ARISTOTLE, Poetics\*, omitting XX and XXV (Butcher, Macmillan); ETHICS I, II and X (Bywater, Oxford); DEMOSTHENES, De Corona\* (Drake, Macmillan).

*Translation at Sight*—Fox & Bromley's Models and Exercises (Clarendon Press).

*Prose Composition*.—Sidgwick, and from Dictation.

*History and Literature*.—Readings from Grote, Curtius, Mahaffy, Symonds; Jebb's Growth and Influence of Classical Greek Poetry; Leaf's Companion to the Iliad; Butcher's Aspects of the Greek Genius; Mahaffy's Social Life in Greece.

*Grammar and Philology*.—Goodwin's Greek Moods and Tenses, and Giles' Short Manual of Philology (Macmillan).

## Latin.

### Ordinary

**First Year.** 1. In this class, besides a general review of grammatical principles (Son-nenschein's Latin Grammar—Accidence: Parallel Grammar Series)—portions of some Latin author such as OVID, TIBULLUS, LIVY, SALLUST, VIRGIL, HORACE or CICERO—are read and explained.

For 1896-97 the subjects will be OVID, Heroides I, II, III, V, VII, XI, XII (Shuck-burgh, Macmillan); SALLUST, Jugurtha (Coleridge, abridged edition: Macmillan's Elementary Classics), and VIRGIL's Eclogues (Sidgwick, Cambridge Press).

For practice in *Composition*, both written and oral, the text-book in use during the first two years will be Ramsay's Manual of Latin Prose Composition Vol. I (Clarendon Press); and for *Translation at Sight*, Jerram's Anglice Reddenda First Series (Clarendon Press).

**SUMMER READINGS.**—CICERO, Pro Cluentio (Fausset, Longmans). *History*.—Strachan-Davidson's CICERO and Warde-Fowler's CAESAR (Putnam); Beesly's The Gracchi, Marius and Sulla (Longmans' Epoch Series).

### Second Year.

2. For 1896-97 the subjects will be CICERO, Second Philippic (Peskett, Cam-bridge Press); VIRGIL, Book IX (Haigh, Clarendon Press); HORACE (Wickham's Selected Odes, Clarendon Press). *Composition and Translation at Sight* as in the First Year.

**SUMMER READINGS.**—LIVY, Selections from Books XXI and XXII (Capes, Mac-millan.) *History*.—Arnold's Second Punic War. *Literature*.—Mackail's Primer of Roman Literature.

The following books are recommended for general use during the first two years of the course: Shuckburgh's History of Rome (Macmillan); Wilkins' or Mackail's Primer of Roman Literature; Wilkins' Primer of Roman Antiquities; Gildersleeve's Latin Grammar, Allen & Greenough's, or Roby's.

\* An asterisk is affixed to the books which will be left to the student's private reading, with help and direction from the Professor.



Students should provide themselves also with Kiepert's *Atlas Antiquus*.

3. Subjects for 1896-97 : *TACITUS*, *Agricola* (Church and Brodribb, Macmillan) ; *CATULLUS*, *TIBULLUS*, and *PROPERTIUS*—Selections : *HORACE*, Selected *Satires* and *Epistles* (Macmillan). Selected extracts will be prescribed for *Composition* ; for *Translation at Sight* the text-book will be *Fox & Bromley's Models and Exercises* (Clarendon Press).

Third  
Year.

SUMMER READINGS : *VIRGIL*, *Aeneid*, I-IV (Page, Macmillan : or Sidgwick, Cambridge Press).

4. Subjects for 1896-7. *TACITUS*, *Histories*, Book I (Godley, Macmillan) ; *JUVENAL* Selected *Satires* (Hardy, Macmillan) or some equivalent. *Composition* and *Translation at Sight* as in the Third Year.

Fourth  
Year.

NOTE.—The following books are recommended for general use : *Gow's Companion to School Classics* (Macmillan) : *Mackail's Latin Literature* (Murray) : *Pelham's Outlines of Roman History* (Percival) : *Capes's Early Roman Empire* (Longmans Epoch Series) ; *Inge's Roman Society in the First Century, A.D.* : *Kiepert's Manual of Ancient Geography* (Macmillan).

Honours.

5. The books selected for class reading during session 1896-97 are the following : *CICERO*, *Pro Milone* (Reid, Cambridge Press) ; *Lucretius* (Selections : Dymes, Rivingtons) ; *TACITUS*, *Annals*, Book I (Furneaux, Clarendon Press) ; *VIRGIL* *Aeneid*, Book XII (Sidgwick, Cambridge Press) ; *HORACE*, *Epistles*, Book I (Wilkins, Macmillan) ; *MARTIAL* (Selections : Stephenson, Macmillan).

Third  
Year.

For practice in *Composition*, written and oral, the manual used will be *Nixon's Selections from Prose Extracts* (Macmillan) ; for *Translation at Sight*, *Fox & Bromley's Models and Exercises*. Students are recommended also to provide themselves with *Meissner's Latin Phrase-Book* (tr. by Auden, Macmillan.) In *History* the examination will be directed to testing a general knowledge of the course of Roman History to the end of the First Century A.D., and a more minute knowledge of the period from B.C. 146 to the Death of Augustus. In *Literature*, a general knowledge will be expected of the course of Roman Literature, and a more minute knowledge of the lives and writings of the authors prescribed.

6. In this class, students will be expected to overtake a comprehensive programme of reading, such as the following, in whole or in part :—*TERENCE*, *Phormio* (Sloman, Clarendon Press, Macmillan) ; *PLAUTUS*, *Captivi* \* (Hallidie, Macmillan) ; *CATULLUS* (Merrill, Ginn & Co.) ; *CICERO*, *de Oratore*, Book I \* (Wilkins, Macmillan) ; in *Verrem* II (Teubner text) ; *Letters* (Tyrrell, Macmillan) ; *HORACE*, *Odes* III and IV \* (Page, Macmillan) ; *VIRGIL*, *Aeneid* II-V \* (Sidgwick, Clarendon Press) ; *TACITUS*, *Annals* XIV-XVI (Furneaux, Clarendon Press) ; *Dialogus de Oratoribus* (Bennett, Ginn & Co.) ; *PROPERTIUS*, IV (Postgate, Macmillan) ; *QUINTILIAN* X \* (Peterson, Clarendon Press—smaller edition) \*

Fourth  
Year.

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\* An asterisk is affixed to the books which will be left to the student's private reading, with help and direction from the Professor.

*Translation at Sight*—Fox & Bromley's Models and Exercises (Clarendon Press). *Prose Composition*.—Nixon's Prose Extracts: and Selected Passages. *History and Literature*.—Readings from Mommsen, Merivale, Sellar, Tenfelde Schwabe (translated by Warr): Tyrrell's Latin Poetry. *Grammar and Philology*.—Lindsay's Short Historical Latin Grammar, (Clarendon Press) and Giles Short Manual of Philology (Macmillan).

## English Language and Literature.

### Ordinary

Professor :—Chas. E. Moyse, B.A.  
Lecturer in Rhetoric :—P. T. Lalleur, M.A.

**First Year.** 1. The course will present an outline of English Literature from the Anglo-Saxon Period to the present day, and will be illustrated by printed syllabuses and lantern slides. The general subject will be divided into four periods (Pre-Chaucerian, Italian, French, Popular), and be approached for the most part through literary types. Students are recommended to use MORLEY'S Charts of English Literature and NICHOL'S Tables of European History, Literature and Art (Maclehose). Two hours a week.

**Third Year.** 2. A course on MIDDLE ENGLISH. CHAUCER. Prologue to the Canterbury Tales (Morris and Skeat, Clarendon Press) will be read in class, and used to illustrate the leading features of the development of the English Language. The life and thought of Chaucer's day will be touched on, and the social aspects of England illustrated by lantern slides. (To be taken with 3.) One hour a week.

**Third Year.** 3. A course on RHETORIC. Text-Book: GENUNG, Rhetoric. (To be taken with 2.) One hour a week.

**Fourth Year.** 4. A course on the LEADING POETS OF THE NINETEENTH CENTURY. The chief aspects of the French Revolution will be considered, and Republican feeling in England illustrated, chiefly from the works of WORDSWORTH, COLERIDGE and SOUTHEY. The indirect revolutionary poets BYRON and SHELLEY will then be considered, and their typical poems, together with those of the poets already mentioned, critically examined. The remainder of the course will be given to SCOTT, KEATS, TENNYSON, BROWNING AND SWINBURNE. One hour a week.

Private reading will also be required of the student, and the time to be given to this part of the subject may be regarded as equivalent to that required to obtain a good knowledge of the matter of the lectures.

### Honours.

**Fourth Year.** 5. MÆSO-GOTHIC. The course on Mæso-Gothic is intended to open the way to the comparative study of allied Teutonic languages. Particular attention will be given to the phonological relations of Mæso-Gothic and Anglo-Saxon. *Text book*: The Gospel of St. Mark (Skeat, Clarendon Press). One hour a week.

**Third Year.** 6. ANGLO-SAXON. An elementary course on Anglo-Saxon. The object of the course is to make the student familiar with the grammar of the language and to enable him to read easy passages at sight. Leading features of Teutonic philo-

logy will be noticed when the text calls for them. Exercises in Anglo-Saxon scansion will form a part of the regular work of the class. *Text-books*: SWEET, Anglo-Saxon Primer and Anglo-Saxon Reader, Extt. IV, VIII, and the pieces in verse. Two hours a week.

**7. ANGLO-SAXON. BÉOWULF.** The text will be read in class and illustrated by notes on origins, philology, and verbal emendations. *Text-book*: \_Harrison and Sharp (Ginn.) One hour a week.

**Fourth  
Year.**

**8. EARLY AND MIDDLE ENGLISH.** The course is intended to give a knowledge of dialectal English, and to illustrate the changes which the language has undergone. *Text-books*: MORRIS and SKEAT's Specimens, Part II, Extt. I-IX. CHAUCER, Parlement of Foules. (Skeat, Minor poems of Chaucer, Clarendon Press.) One hour a week.

**Third  
Year.**

**9. EARLY ENGLISH.** The course is a continuation of 8. *Text-book*: MORRIS and SKEAT's Specimens, Part II, Extt. X-XX. One hour a week.

**Fourth  
Year.**

**10. ELIZABETHAN AND EARLY STUART PERIODS.** The general influences visible in the literature of the periods will be noticed by way of introduction to a critical examination of the following works which have been selected for private study: SPENSER, Shepheard's Calendar (Herford, Macmillan); Faerie Queene, Bk. I. (Percival, Macmillan); SIDNEY, An Apology for Poetry (Cook); MILTON, Shorter English Poems (Browne, Clarendon Press); and Areopagitica (Hales). One hour a week.

**Third  
Year.**

**11. SHAKSPEARE.** The social and literary conditions of Elizabethan England will be noticed, and the characteristics of the pre-Shaksperian drama specially illustrated. The following plays have been selected for special criticism and private study: Love's Labours Lost (Rolfe), A Midsummer Night's Dream (Deighton, Macmillan); Hamlet (Deighton, Macmillan); and the Tempest (Deighton, Macmillan). One hour a week.

**Fourth  
Year.**

**12. LATER STUART PERIOD.** The method of 10 will be followed. The works selected for private study are: DRYDEN, Annus Mirabilis, Absalom and Achitophel, Part I; the Preface to the "Fables" (Globe Edition, or for Absalom and Achitophel. Dryden's Satires, ed. Collins, Macmillan). ADDISON, Essays on Paradise Lost and on the Imagination (Spectator, ed. Henry Morley, Routledge). One hour a week.

**Third  
Year.**

**13. LATER STUART PERIOD.** An introductory sketch of the critical and philosophical essayists in verse, leading up to a more minute examination of the following works of POPE, which have been selected for private study: Essay on Criticism, Essay on Man (Globe Edition). One hour a week.

**Fourth  
Year.**

**14. PERIOD OF POPULAR INFLUENCE.** Influence of the French Revolution. The influence of the French Revolution on contemporary English Literature will be discussed. The following poems have been selected for special criticism and private study: WORDSWORTH, Prelude (Moxon's edition), and CAMPBELL, Pleasures of Hope. One hour a week.

**Third  
Year.**

**15. MODERN POETS.** An interpretation in detail of TENNYSON's In Memoriam and a comparative criticism of other famous English poems of the same class. An outline of the growth of the Arthur Saga and a special examination of TENNYSON's Idylls of the King. BROWNING, Christmas Eve and Easter Day.

**Fourth  
Year.**



In addition to the poems just mentioned, MILTON'S *Lycidas*, SHELLEY'S *Adonais*, and MATTHEW ARNOLD'S *Thyrsis* have been selected for private study. One hour a week.

**Note.**—Honour students of the Third Year will privately study the following works, and write an essay on some topic arising from them: BURKE, *Reflections on the French Revolution*; LEBLANC, *English Thought in the Eighteenth Century*, Vol. II, chap. X, secs. V to X inclusive. The Essay will count in the awarding of honours.

Honour students of the Fourth Year will, in like manner, take the following: MORE, *Utopia*; MATTHEW ARNOLD, *Essays in Criticism* (the Second Series).

**Readings** from authors who do not find a place in the above courses will be given by Prof. Moyse on Saturdays, at noon. The selections will be taken for the most part from writers of the present century. Attendance is voluntary.

## French.

Lecturer in French:—M. Ingres, B.ès-Lettres.

Sessional Lecturer:—J. L. Morin, M.A.

The earlier courses of instruction in French have been framed with the view of enabling the student to speak the language with facility and correctness. In the later courses, particular attention will be given to the style and substance of French classics, both in prose and verse, and also to the historical development of the French language and literature.

## Ordinary

**First Year.** 1. Instruction will be given according to the natural method, the French language being exclusively used. The following outline will indicate the character of the course: (a) The oral reproduction of stories selected from French writers of the present century. In connection with this part of the work, words will be referred to groups in order to make the progress of the student more rapid. (b) Biographical sketches of the leading writers of the present century, illustrated by typical selections from their works, which will be read by the class, and committed to memory. (c) Private Reading, the amount and character of which will be determined by the proficiency of the individual student. The following works may be taken as specimens of the literature chosen for the class: ECKMANN-CHATRIAN, *L'Ami Fritz*. PIERRE LOTI, *Pêcheurs d'Islande*. VICTOR HUGO, *Hernani*. G. SAND, *Le Marquis de Villemer*. In the examination of the students of affiliated colleges the extracts given for translation from French into English will be taken, in part, from the first three works mentioned above.

There will be regular exercises in dictation and composition. Students are recommended to use *Le Dictionnaire Larousse*.

Three hours a week.

## Second Year.

2. The method of the course is the same as that of 1, but the more advanced points of grammar will be treated, and in literature particular attention will be directed to characteristics of style.

The following works may be taken as specimens of the literature chosen for the class: J. SANDEAU, *Mlle. de la Seiglière*; L. HALÉVY, *L'Abbé Constantin*; MERIMÉE, *Carmen*; DE VIGNY, *Cinq Mars*; CHATEAUBRIAND, *René*.

In the examination of the students of affiliated colleges the extracts given for translation from French into English will be taken, in part, from the first three works mentioned above.

There will be regular exercises in dictation and composition. Students are recommended to use *Le Dictionnaire Larousse*.

Three hours a week.

3. A continuation of 2. The form and origin of words will be treated more fully than in previous courses, and an outline of philology given. In the literary portion of the course the leading characteristics of the Classic, Romantic, Realistic, Impressionist and other schools will be described. Biographical sketches of writers who belong to the XVII and XVIII centuries will be given, and illustrated by typical selections from their works, which will be read in class and committed to memory. The following works of the same period have been chosen for private reading previous to their consideration by the class: B. DE ST. PIERRE, *Paul et Virginie*. VOLTAIRE, *Siècle de Louis XIV*. ROUSSEAU, *Emile*, *Le Contrat Social*. CORNEILLE, *Le Cid*, *Horace*, *Cinna*. RACINE, *Athalie*, *Phèdre*, *Andromaque*. MOLIÈRE, *Tartuffe*, *Le Misanthrope*, *Le Bourgeois Gentilhomme*. MME. DE SÉVIGNÉ, *Lettres*. BOSSUET, *Discours sur l'Histoire Universelle*; *Oraisons funèbres*. PASCAL, *Lettres provinciales*.

There will be regular exercises in composition.

Two hours a week.

4. Important historical changes of various kinds in the vocabulary of French will be noticed, and sentences presenting peculiar difficulties explained. The origin of the French language will be more fully treated, and French literature previous to Corneille read. Biographical sketches of leading writers of that period will be given, and typical selections from their works committed to memory. The following works have been chosen for private reading previous to their consideration by the class: MONTAIGNE, *Essais*; *La Satire Ménippée*. DESCARTES, *Discours de la méthode*. AMYOT, *Traduction de Plutarque*. CALVIN, *L'Institution Chrétienne*. RABELAIS, *Gargantua, Pantagruel*. COMMINES, *Louis XI*. JOINVILLE, *Vie de Saint Louis*. FROISSART, *Chroniques*. VILLEHARDOUIN, *Chroniques*.

There will be regular exercises in composition.

Two hours a week.

5. *Grammar*.—A course on French grammar treated historically. Students are recommended to consult the following works: BRACHET, *Grammaire Historique de la Langue Française*, *Dictionnaire Etymologique*. BRUXOT, *Grammaire Historique de la Langue Française*. CLÉDAT, *Grammaire de la Vieille Langue Française*. LITTRÉ, *Histoire de la Langue Française*. F. BRUNETIÈRE, *Etudes Critiques*. G. PARIS, *La Littérature Française au Moyen Âge*.

*Literature*.—The student is expected to undertake a thorough study of the following works, portions of which will be read in class: *LE ROMAN DE LA ROSE*; *LE ROMAN DE RENART*. J. BÉDIER, *Les Fabliaux*; PETIT DE JULLEVILLE, *Les Mystères*.

Two hours a week.

6. A course in Old French. The student will be guided in a comparative study of the Romance languages, and will use the following works of reference:

Third  
Year.

Fourth  
Year.

Honours.

Third  
Year.

Fourth  
Year.

E. RENAN, *Essai sur la Poésie des Races Celtiques*. EGGER, *l'Hellénisme en France*. ROQUEFORT, *Glossaire de la Langue Romane*. BUSGNY, *Grammaire de la Langue d'Oïl*. BRÉAL, *Grammaire comparée*. F. DIEZ, *Grammaire des Langues Romanes*. MEYER-LÜBKE, *Grammaire des Langues Romanes*.

The literary biography and history of the period will be treated, and in connection therewith the following works will be read :

JEAN BODEL, *Le Jeu de saint Nicholas*. WACE, *Le Roman de Rou*, *Le Roman de Brut*. LA CHANSON DE ROLAND, *LA VIE DE SAINT ALEXIS*. *LA VIE DE SAINT LEGER*.

Two hours a week.

## German Language and Literature.

Lecturer, L. R. Gregor, B.A.

The following courses, both Ordinary and Honour, will be very considerably modified and extended in and after 1897, after which time students entering the German Classes will be required to pass a Matriculation Examination.

At the present time the ordinary Courses mainly keep practical ends in view. As far as possible they place the student at the German standpoint, so that he may study the language from within. Special attention is given to colloquial exercises in the First and Second Courses, to Literature in the Third and Fourth. The German Language is employed to a considerable extent in the First and Second Courses, and almost to the exclusion of English in the Third and Fourth. Importance is attached to correct and expressive reading.

- First Year.** 1. VANDERSMISSEN AND FRASER, *German Grammar*; JOYNES, *German Reader*; *Colloquial Exercises*.  
Three hours a week.
- Second Year.** 2. VANDERSMISSEN AND FRASER, *German Grammar*; JOYNES, *German Reader*; FREYTAG, *Die Journalisten*; UHLAND, *Ballads and Romances* (Macmillan's *Foreign School Classics*); JENSEN, *Die braune Erica* (Heath). Translation at Sight from a German weekly newspaper; Parsing, etc.  
Two hours a week.
- Third Year.** 3. GOETHE—Extracts from *Dichtung und Wahrheit*; SCHILLER, *Wallenstein*. *German Grammar*; *German Composition*; *History of German Literature*. Two hours a week.
- Fourth Year.** 4. SCHILLER, *Jungfrau von Orleans*; LESSING, *Nathan der Weise*; GOETHE, *Hermann und Dorothea*. *History of German Literature*; *German Grammar*; *German Composition with translation from English into German* (Hornig). Two hours a week.

**Honours.** Lectures in this Course are given entirely in the German Language. They take up the subjects of Courses Three and Four in alternate years, and reproduce the main features of these Courses in greater extension, with the addition of careful study of Texts with philological, historical and explanatory notes. Texts are also prescribed for private reading.

Honour Students of the Third and Fourth Years take lectures in common. The order in which the following text-books are taken up is subject to re-arrange



- 5a. A special study of GOETHE'S FAUST (Part I); GOETHE, *Leiden des Jungen Werther*; Selections from HERDER'S *Volklieder*: Macmillan's German Composition.

Third  
Year.

N.B.—The above constitutes the Additional course. See p. 41.

- 5b. GOETHE, *Egmont*; LESSING, *Emilia Galotti*; Extracts from FREYTAG'S *Bilder aus der deutschen Vergangenheit*; SCHILLER, *Don Carlos*. History of German Literature (KLUGE); Historical Grammar.

- 6a. LESSING, *Laokoon*; BEHAGHEL, *Deutsche Sprache*: GRILLPARZER, *Sappho*; SCHILLER, *Die Braut von Messina*; Macmillan's German Prose Composition.

Fourth  
Year.

N.B.—The above constitutes the Additional Course. See p. 41.

- 6b. SCHILLER, *Maria Stuart*; SCHEFFEL, *Trompeter von Sakkingen*, Selections from HEINE'S *Lyrical Poems*; HARTMANN VON AUE, *Gregorius auf dem Steine*; ZARNCKE, *Das Nibelungenlied*. History of German Literature (KLUGE); Original Compositions in German.

In order to obtain First or Second Rank Honours, a Candidate must be capable of speaking and writing German.

## Semitic Languages.

Professor:—D. Coussirat, B.A., B.D., D.D., Officier d'Académie.

Ordinary

The course comprises lectures on the above languages and their literature, their genius and peculiarities. Comparative philology, affinity of roots, etc., also receive due attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, etc.

1. Hebrew Grammar (Inductive Method). Oral and written exercises in Orthography and Etymology. Translation and grammatical Analysis of the Old Testament. *Text-books*: HEBREW BIBLE, HARPER'S *Elements of Hebrew*, *Introductory Hebrew Method and Manual*.  
Two hours a week.

First Year.

2. Hebrew grammar and translation continued. English rendered into Hebrew. MASORETIC notes explained. The Hebrew text compared with the Septuagint and Vulgate Versions.  
Two hours a week.

Second  
Year.

3. Hebrew Syntax. Translation of difficult passages of the Old Testament. Notes on the MASORA and the TALMUD (Mishna and Gemara).  
Two hours a week.

Third  
Year.

4. Translation continued. Characteristics of the Semitic Languages, particularly of ARAMAIC, SYRIAC, SAMARITAN, RABBINIC, ARABIC, ASSYRIAN. SEMITIC INSCRIPTIONS.  
Two hours a week.

Fourth  
Year.

- 5a. HEBREW. Genesis. Isaiah, 40-66. Ecclesiastes.—*Literature*.—F. LENORMANT, *The beginnings of History*.

Honours.  
Third  
Year.

- 5b. ARAMAIC.—Daniel. Ezra. Selections from the TARGUMS.

*Literature*.—SAYCE, *Lectures on the Origin and Growth of Religion*.  
Two hours a week.

- Fourth Year.** 6a. HEBREW.—Malachi, Psalms, 1-72; Job, 26-42. *Literature*.—RENAN, A. General History of the Semitic Languages.
- 6b. SYRIAC.—Selections from the PESHITO, and from the CHRONICLES OF BAR HEBRÆUS.—*Literature*.—W. WRIGHT, Comparative Grammar of the Semitic Languages.
- Two hours a week.
- 5b and 6b. (*Literature excepted*) are the Additional Courses.

## History.

### Ordinary

Professor :—Charles W. Colby, M A., Ph.D.

#### Second Year.

1. THE POLITICAL HISTORY OF EUROPE FROM 1789 TO 1878.
- Two hours a week.

It is the aim of these lectures to enable the student to follow intelligently the course of modern international relations. The most important subjects to be treated in detail are the French Revolution, the growth of Democracy and Nationality, and the actual political state of the British Empire.

### Honours.

#### Third and Fourth Years.

2. THE GERMAN INROADS AND THE MIDDLE AGES.
- Three hours a week.

These lectures extend from the recognition of Christianity as a state religion to the death of Dante. They deal with such subjects as the character and organization of the Early Church; the laws, political institutions, and conquests of the German nations; the Empire of Charlemagne, the Holy Roman Empire in its relations with the Papacy, Feudalism, Monasticism, the Crusades, Romanesque and Gothic Architecture, the Schoolmen, and Dante. An attempt will be made to present mediæval civilization in its positive aspects.

3. THE RENAISSANCE AND THE REFORMATION.
- Two hours a week, and Seminary.
- (Omitted in 1896-97.)

4. STUDIES IN THE HISTORY OF DEMOCRACY PRIOR TO THE FRENCH REVOLUTION.
- Two hours a week.
- (Omitted in 1896-97.)

#### Third and Fourth Years.

5. THE FRENCH REVOLUTION, 1789-1815.
- Two hours a week.

The Revolutionary movement will be considered throughout its course, from the opening of the States General to the battle of Waterloo. The constitutional history of the years 1789-1799, and the domestic administration of Napoleon will be dealt with in detail. While the immediate effect of the Revolution on France will be chiefly regarded, attention will also be paid to its European and general character. A third hour may, at the discretion of the Professor, be taken for the discussion in Seminary of some special topic relating to the period.

Note.—Courses 2 and 3 are given in alternate years. Courses 4 and 5 are given in alternate years.

Bibliographical lists relating to the historical courses given in 1896-97 may be had on application to the Secretary.

#### SUMMER READINGS.

Students who are devoting special attention to the literary branches of the University course are advised to read during the long vacation either the first or the second set of the subjoined selections.

- I. HERODOTUS, VI-VIII, Macaulay's trans: THUCYDIDES, I, II 1-65, VI, VII, Jowett's trans: PLATO, the Republic, Jowett's trans: PLUTARCH, the Lives of Aristides, Themistocles, Pericles, and Timoleon, Clough's trans: POLYBIUS, I, II, V, Shuckburgh's trans: LIVY, XXI-XXII, Church and Brodribb's trans: TACITUS, Annals II, Germania, Vita Agricola, Church and Brodribb's trans.
- II. CLARENDON, History of the Rebellion, Book XI; GIBBON, Decline and Fall, Chaps. XLIV, L, LI, LXVI; BURKE, Reflections on the French Revolution; HALLAM, Middle Ages, Chap. III; MACAULAY, History of England, Chap. III; BAGEHOT, The English Constitution; STUBBS, Select Charters Introduction; BRYCE, The Holy Roman Empire Chaps. I-XV; LORD ACTON, German Schools of History, English Historical Review, Vol. I.; MATTHEW ARNOLD, Pagan and Mediæval Religious Sentiment, in Essays in Criticism (First Series).

### Mental and Moral Philosophy.

Professor :—J. Clark Murray, LL.D.

Lecturer :—P. T. Lafleur, M.A.

1. This course takes up in the first term the elements of **Psychology**, in the second the elements of **Logic**. Students are referred, among other works, to MURRAY, Handbook of Psychology, Book I., and to JEVONS, Elementary Lessons on Logic.

Three hours a week.

2. In the first term the course takes up the Logic of Induction. Students are referred specially to MILL, System of Logic, Book III.

Two hours a week.

In the second term the course takes up the most interesting problems in the Psychology of Cognition, tracing, as far as possible, the principal stages in the evolution of intelligence. The general problem, also, of the nature of knowledge is discussed, in view of the light which it throws on the ultimate nature of reality. Students are referred, among other works, to MURRAY, Handbook of Psychology, Book II., Part 2. Students are also required to write an essay on some philosophical subject.

Two hours a week.

Ordinary  
Second  
Year.

Third  
Year.

**Fourth Year.**

3. This course is devoted entirely to Moral Philosophy, and follows, in its general outline, the subjects discussed in MURRAY's Introduction to Ethics. Students are also required to write essays on ethical questions.

Two hours a week.

**Honours.****Third Year.**

4 This course is devoted mainly to the history of Greek Philosophy. It begins with the colonial period, during which philosophical activity was most energetic among the colonies of the Greeks in Asia Minor and Italy. It then passes on to the Athenian period, beginning about the middle of the fifth century, B.C., when Philosophy found a home in the greatest centre of intellectual life in the ancient world. A third period is then described, during which Philosophy extends its culture over ancient life by the spread of the great schools, especially the Stoical and the Epicurean, which arose towards the end of the fourth century B. C. Finally, some account is given of the movement, of which Alexandria was the centre, and by which Greek Philosophy was brought into contact with Oriental thought. The history is carried down to the closing of the Pagan Schools in Athens by the Emperor Justinian. Occasional lectures are also given on the other special studies of the Third Year Honour Course. Students are expected to make an independent study of the fragments of one of the early philosophers, and to write an essay embodying the results of their study.

Two hours a week.

**Fourth Year.**

5. The lectures of this Year form two courses. One is devoted to the earlier period of Modern Philosophy. After sketching the transition from Mediæval to Modern thought, the course gives some account of the Empirical movement started in England by Bacon and Hobbes, and developed by Locke and his school. The Idealistic tendency of speculation during this period is sketched mainly in three movements:—that which began in England with the Cambridge Platonists, and culminated in Berkeley; the German movement originated by Leibnitz, and formulated by Wolf; the Cartesian movement which culminated in Spinoza. The course closes with a lengthy exposition of KANT's three Critiques.

First term, two hours a week; second term, one hour a week.

6. The other course is on the History of English Philosophy from Hartley to Herbert Spencer. The lectures discuss the chief characteristics of English thought during the last one hundred and fifty years, more particularly as shewn in the works of English psychologists and political writers during that time. The writers to whom special attention is given are: in Psychology—PRIESTLEY, HARTLEY, ERASMUS DARWIN, the two MILLS, BAIN, and HERBERT SPENCER; in Political and Social Science—BURKE, PAINE, GODWIN, PALEY, BENTHAM, MALTHUS. References are also made to minor writers, whose work may be deemed to be of sufficient importance in the general movement and development of philosophy. No text-book is specially recommended; but the student is expected to read appointed selections from the writers under discussion, as well as to consult LESLIE STEPHEN's History of English Thought in the Eighteenth Century, and a few chapters in LEWES' History of Philosophy. The principal points emphasized in the lectures are the empirical character of the English school in psychology and metaphysic, and the practical, utilitarian views of English political writers.

Second term; one hour a week.





**Third Year** 7. MATHEMATICAL PHYSICS.—MINCHIN, Statics, Vol. (I., selected chapters) ; WILLIAMSON and TARLETON, Dynamics, Chaps. 1 to 8 inclusive ; BESANT, Vol. I., Hydro-Mechanics, Part I., chaps. 1, 2, 3, 7 ; PARKINSON, Optics.  
Two hours a week.

8. MATHEMATICS.—WILLIAMSON, Differential and Integral Calculus and BOOLE or FORSYTH, Differential Equations, or SALMON, Geometry of Three Dimensions, (alternate years).

ASTRONOMY.—GODFRAY.

Two hours a week.

EXPERIMENTAL PHYSICS.—Courses 4 and 6.

**Fourth Year.**

9. MATHEMATICS.—WILLIAMSON, Differential and Integral Calculus ; SALMON, Conic Sections ; SALMON, Geometry of Three Dimensions (course selected in text-book) ; BOOLE or FORSYTH, Differential Equations (selected course).

10. PHYSICAL ASTRONOMY.—GODFRAY, Lunar Theory, or CHEYNE'S Planetary Theory ; NEWTON, Principia, Lib. I., Sects. 9 and 11, with the necessary preliminary propositions.

11. MATHEMATICAL PHYSICS.—MINCHIN, Statics, Vol. II., selected chapters ; WILLIAMSON and TARLETON, Dynamics ; ROUTH, Dynamics of a Rigid Body (for reference) ; BESANT, Hydro-Mechanics ; PRESTON, Theory of Light ; CUMMING, Theory of Electricity.

EXPERIMENTAL PHYSICS.—Courses 5 and 7.

## Natural Philosophy.

Professors :— { John Cox, M.A.  
                  { Hugh L. Callendar, M.A., F.R.S.

Demonstrators :— { Rev. H. M. Tory, B.A.  
                          { F. H. Pitcher, B.A.Sc.  
                          { Howard T. Barnes, B.A.Sc.

**Ordinary**

### I. Mathematical Physics.

**Second Year.**

1. ELEMENTARY MECHANICS. One hour a week up to February. An introductory course, without Text-book, developing the fundamental principles of Mechanics. One hour a week.

**Third Year.**

2. MECHANICS AND HYDROSTATICS ; *Text-book*, LONEY'S Mechanics and Hydrostatics for beginners.  
Two hours a week till January.

**Third Year.**

3. OPTICS ; *Text-book* GALBRAITH AND HAUGHTON.  
Two hours a week, from January to end of Session.

### II. Experimental Physics.

**Third Year.**

4. LAWS OF ENERGY, SOUND, LIGHT AND HEAT. *Text-book*, GANOT'S Physics. Lectures fully illustrated.  
Two hours a week.

5. **ELECTRICITY AND MAGNETISM.** *Text-book*, GANOT'S Physics. Lectures fully illustrated.

Two hours a week.

**Fourth  
Year.**

### III. Laboratory Courses.

In Experimental Physics, requiring three hours per week to be spent in practical measurements in the McDonald Physical Laboratory, during the Third and Fourth Years, in conjunction with the Lecture Courses 4 and 5.

6. (a) **SOUND**—Velocity of Sound; Determination of rates of vibration of Tuning Forks; Resonance; Laws of vibration of strings.  
 (b) **LIGHT**—Photometry; Laws of Reflection and Refraction; Indices of Refraction; Focal Lengths and Magnifying Powers of Mirrors, Lenses, Telescopes and Microscopes; the Sextant, Spectroscope, Spectrometer, Diffraction Grating, Optical Bench, and Polariscope.  
 (c) **HEAT**—Construction and Calibration of Thermometers; Melting and Boiling Points; Air Thermometer; Expansion of solids, liquids, and gases; Calorimetry.

**Third  
Year.**

7. **MAGNETISM**.—Measurements of Pole Strength and Moment of a Magnet; the Magnetic Field; Methods of Deflection and Oscillations; comparison of moments and determination of elements of Earth's magnetism. Frictional Electricity. Current Electricity.—Complete course of measurements of Current Strength, Resistance and Electromotive Force; Calibration of Galvanometers; the Electrometer; comparison of Condensers; Electromagnetic Induction.

*Text-Book*.—GLAZEBROOK & SHAW'S Practical Physics.

**Fourth  
Year**

[N.B.—For Advanced Courses intended for Electrical Engineering Students and Graduates pursuing the study of Physics, see Calendar, Faculty of Applied Science.]

## Chemistry and Mineralogy.

Professor of Chemistry:—B. J. Harrington, M.A., Ph.D.

Lecturer:—N. NORTON EVANS, M.A.Sc.

Demonstrator:—Alex. Brodie, B.A.Sc.

**Ordinary**

- 1a. **GENERAL CHEMISTRY** (*Optional*).—A course of lectures on elementary chemical theory, and on the principal elements and their compounds. The lectures are fully illustrated by means of experiments, and are supplemented by tutorial classes.

Two hours a week.

*Text-Book*.—REMSEN'S Introduction to the Study of Chemistry.

- 1b. **ELEMENTARY PRACTICAL CHEMISTRY**.—Experiments in connection with the above course of lectures performed by the students, and elementary Qualitative Analysis. This class is intended for students in Applied Science, but a few Students in Arts may be admitted.

One afternoon a week.

**First Year.**

- Second Year.** 2. **INORGANIC CHEMISTRY** (*Advanced and Optional*).—The Chemistry of the principal electro-positive elements and their compounds. (Arrangements may be made for this Course for Session 1896-97.)  
One hour a week.
- Third Year 3.** **ORGANIC CHEMISTRY**.—Lectures, with occasional demonstrations, on the analysis of organic bodies; calculation of formulæ, determination of molecular weights, polymerism, isomerism, etc., followed by a discussion of some of the more important Methane derivatives and their constitution.  
One hour a week.
- Fourth Year.** 4. **ORGANIC CHEMISTRY**.—Lectures in continuation of those in Course 3, discussing some of the principal Benzene and Pyridine derivatives. Students should have previously taken Course 3.  
One hour a week.
- Third Year 5.** **ANALYTICAL CHEMISTRY (QUALITATIVE)**.—A systematic study of the more important bases and acids, including their detection and separation. The laboratory work is accompanied by explanatory lectures.  
*Text-book*.—Qualitative Chemical Analysis, by ARTHUR A. NOYES.  
Six hours a week.
- Fourth Year.** 6. **ANALYTICAL CHEMISTRY (QUANTITATIVE)**.—Laboratory practice in methods of gravimetric, volumetric and electrolytic Quantitative Analysis. The course is open to those who have taken No. 5.  
*Text-book*.—CLOWES & COLEMAN'S Quantitative Analysis.
- Third Year 7.** **PHYSICAL CHEMISTRY (OPTIONAL)**.—A course of lectures on Stoichiometry and Chemical Affinity. Special attention is directed to those parts of the subject which have a direct bearing on the processes of practical chemistry, such as the modern theories of solution and electrolytic dissociation.  
One hour a week.
- Honours.**
- Third Year 8.** **MINERALOGY**.—Lectures and demonstrations illustrated by models and specimens in the Peter Redpath Museum. Among the subjects discussed are: Crystallography; physical properties of minerals dependent upon light, electricity, state of aggregation, etc.; chemical composition, calculation of mineral formulæ, quantivalent ratios, etc.; principles of classification, description of species.  
First term, one hour a week; second term, two hours a week.
- Fourth Year.** 9. **MINERALOGY**. (In continuation of No. 8.) Description of species, particular attention being paid to those which are important as rock constituents and to the economic minerals of Canada.  
First term, two hours a week.
- Third Year 10.** **DETERMINATIVE MINERALOGY**.—Laboratory practice in blowpipe analysis and its application to the determination of mineral species.  
Thursday, 2 to 5 p.m.



## Botany.

Professor:—D. P. Penhallow, B.Sc., M.A.Sc.

Demonstrator:—C. M. Derick, M.A.

Ordinary

1. **GENERAL MORPHOLOGY.** This course is designed to give a through general knowledge of the principles of General Morphology and Classification. It comprises :

Second  
Year.

(a) Determination of species from both dry and fresh materials; type studies of Spermaphytes, Pteridophytes, Bryophytes, and Thallophytes, with reference to their life histories. GRAY's Structural Botany, GRAY's Manual, PENHALLOW's Outlines of Classification, and Botanical Collector's Guide.

*First term*, three hours a week.

(b) General Morphology and Classification; elements of Histology and Physiology; Biological relations of plants.

*Second term*, two hours a week.

2. **ADVANCED ANATOMY.** \* This course, open to students who have taken Botany 1, is designed to give an extended knowledge of vegetable anatomy. It comprises :—

Third  
Year.

(a) Optics and construction of the microscope; determination of amplifications; micrometry; drawings; section cutting; preparation of microscopic objects; micro-chemical reactions; study of cell contents and tissues, comparative studies of type forms of angiosperms and gymnosperms.

Four hours a week.

• (b) A continuation of the course in the Third Year. Critical studies of the structure and development of the Pteridophyta, Bryophyta, Thallophyta and Protophyta.

Four hours a week.

Fourth  
Year.

\* Students satisfactorily completing this course, will be eligible to the occupation of an investigator's table held by the University at the Wood's Hall Biological Laboratory.

\*\* The continuance of these courses for 1896-97 is contingent upon the provision of adequate assistance in the Department.

The fee for the Session in each of the above courses is \$10. Students are required to supply their own slides and cover glasses.

## Zoology.

Lecturer.—W. E. Deeks, B.A., M.D.

Ordinary

3. This course will include lectures on elementary Physiology based on HUXLEY's lessons; a general account of Embryological development: the morphology and classification of the Invertebrata, with a general description of their modes of life, etc.; and the comparative anatomy with the classification of the Vertebrata. As far as possible, the Canadian Fauna will be referred to in the descriptive lectures, which will be illustrated by concurrent demonstrations of microscopical, moist and dry preparations, with dissections of all the leading types. Students have access also to LEBEART's charts.

Third  
Year.

Two hours a week, apart from demonstrations.

*Text-Books*.—THOMSON'S *Outlines of Zoology*, DAWSON'S *Handbook* (for Canadian reference).

**Fourth Year.** 4 The preparation and study of animal tissues microscopically. This includes killing, hardening, sectioning, staining, mounting, etc. Practical Anatomy, with lectures. The animals dissected will be representative types both Vertebrate and Invertebrate.

*Text-Book*.—MARSHALL AND HURST'S *Practical Zoology*. Additional fee of \$10.

N.B.—Students desiring to take Geology in the Fourth Year, are recommended to take Zoology in the Third Year.

## Geology and Palæontology.

Professor :—Frank D. Adams, M.A.Sc., Ph.D.

### Ordinary

**Fourth Year.** 1. **GENERAL GEOLOGY**.—The lectures will embrace a general survey of the whole field of Geology, and will be introduced by a short course on Mineralogy. Especial attention will be devoted to Dynamical Geology and to Historical Geology, including a description of the fauna and flora of the earth during the successive periods of its past history.

The lectures will be illustrated by the extensive collections in the Peter Redpath Museum as well as by models, maps, sections and lantern views. There will be an excursion every Saturday until the snow falls, after which the excursion will be replaced by a demonstration in the Museum.

*Text-book*.—DAWSON, *Hand-book of Geology*. *Books of Reference*. DANA, *Manual of Geology*; BONNEY, *Story of our Planet*.

Three hours a week throughout the year, with additional excursions and demonstrations as above stated.

### Honours

**Fourth Year.** 1. **PETROGRAPHY**.—The modern methods of study employed in Petrography are first described, and the classification and description of rocks is then taken up.

One lecture a week during the second term. One afternoon a week during the second term will be devoted to special microscopical work in the Petrographical Laboratory.

*Books of Reference*.—ROSENBUSCH, *Mikroskopische Physiographie*, and RUTLEY, *Rock-forming Minerals*.

**Fourth Year.** 2. **PALÆONTOLOGY**.—An extension of the Palæontology of Course 1, with special studies of some of the more important groups of fossils.

One lecture a week during the second term and one demonstration a week, with special studies in the Peter Redpath Museum.

*Books of Reference*.—NICHOLSON and LYDEKKER, *Manual of Palæontology*; WILLIAMS, *Geological Biology*.

**Fourth Year.** 3. **PRACTICAL AND APPLIED GEOLOGY**.—A description of the methods employed in observing and recording geological facts, concluding with a general treatment of the nature and mode of occurrence of Ore Deposits.

One lecture and one demonstration a week during first term.

*Text-books.*—GEIKIE, Outlines of Field Geology; KEMP, Ore Deposits of the United States.

5. CANADIAN GEOLOGY.—A general description of the Geology and Mineral Resources of the Dominion. One lecture a week during the second term.

*Text-book.*—DAWSON, Hand-book of Geology.

*Books of Reference.*—The Reports of the Geological Survey of Canada.

**Fourth  
Year.**

6. GEOLOGICAL COLLOQUIUM.—A discussion each week of some Geological topic, references to the literature of which have been given by the Professor in the week preceding. The course is intended to give students some acquaintance with Geological literature, as well as a wider knowledge of the great principles which underlie the Science.

One hour a week in second term.

**Fourth  
Year.**

Students taking any of these courses are entitled to tickets of admission to the Museum of the Natural History Society of Montreal.

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## Meteorology.

\* Superintendent of Observatory :—C. H. McLeod, Ma.E.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of the senior students.

Certificates will be granted to those students who pass a satisfactory examination on the construction and use of Meteorological instruments and on the general facts of Meteorology.

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## Pedagogy.

Lectures on this subject will be given in the Normal School to undergraduates of the Third and Fourth Years who wish to obtain the Provincial Academy Diploma.

Lecture hour : 3 p.m., Tuesday and Friday.

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## Elocution.

Instructor :—J. P. Stephen.

Instruction is given in this subject at hours that may be settled at the beginning of the session. Special fee for session \$2.

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## Physical Culture.

Medical Examiner and Instructor :—R. Tait MacKenzie, B.A., M.D.

The classes will meet at the University Gymnasium, at hours to be announced at the commencement of the Session. THE WICKSTEED SILVER AND BRONZE MEDALS (the gift of Dr. R. J. Wicksteed) are offered for competition to students of the Graduating Class and to students who have had instruction in the Gymnasium for two sessions,—the silver medal to the former, the bronze medal to the latter.

( See Regulations appended.)

# LECTURES IN THE UNDERGRADUATE COURSE IN THE FACULTY OF ARTS

SESSION OF 1896-97.

| Hours.       | MONDAY.                                                                                               | TUESDAY.                                                                                                   | WEDNESDAY.                                                                                           | THURSDAY.                                                                                                         | FRIDAY.                                                                                                                                           |
|--------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| FIRST YEAR.  | 9 Latin.<br>10 Mathematics.<br>11 * French.<br>12 * German.<br>2 Greek                                | † Mathematics. * Hebrew.<br>Greek.<br>* German.<br>* French.                                               | Mathematics.<br>Latin.<br>* German.<br>* English.                                                    | † Mathematics.<br>* French. * Hebrew.<br>* German.<br>Latin.                                                      | Mathematics.<br>Greek.<br>English.<br>* Elementary Chemistry.                                                                                     |
| SECOND YEAR. | * French.<br>Greek.<br>Mathematics.<br>Botany. † Mathematics.                                         | Logic.<br>* German.<br>Latin.<br>Math. Phy.                                                                | * French.<br>Logic.<br>Botany.<br>Latin.<br>Greek                                                    | * Hebrew.<br>Logic.<br>Latin.<br>Modern History.                                                                  | Greek.<br>* French.<br>* German.<br>Greek.<br>Modern History.                                                                                     |
| THIRD YEAR.  | 9 English.<br>10 * Geology. (a)<br>11 German. Math. Phys.<br>12 Mental Philosophy.<br>† Latin † Math. | Greek.<br>French. † Mental Phil.<br>† Latin.<br>Zoology.<br>Experimental Physics.<br>Botany.               | † Greek. † Math. Phys.<br>† Anglo-Saxon.<br>Math. Physics.<br>Mental Phil., Hebrew<br>† Latin.       | Greek.<br>French. Chemistry<br>Hebrew.<br>Zoology.<br>Experimental Physics.                                       | Greek.<br>German. † Math. Phys.<br>† Greek. † English. † Mineral-<br>ogy.<br>† Rhetoric.<br>† Syriac, etc.<br>Math. Physics.<br>Latin.<br>Botany. |
| FOURTH YEAR. | 9 † Greek.<br>10 Exp. Physics.<br>11 Geology.<br>12 * Geology. † Math.<br>Greek.<br>Moral Phil.       | Astronomy. (a) † Mineralogy.<br>French. † Mental Phil.<br>Moral Phil. † Math. Phys.<br>Chaldee.<br>Botany. | Geology. † Greek. † Math.<br>Astronomy.<br>Latin.<br>Greek.<br>† Mineralogy (a). Hebrew.<br>† Latin. | Exp. Physics<br>German. History.<br>† Mental Phil. Hebrew.<br>† Moral Philosophy.<br>† Chaldee.<br>Astronomy. (a) | † Greek. † Math. Phys.<br>Geology.<br>Latin.<br>French. † Geology. † Anglo-<br>Saxon and Early English.<br>German.<br>† Latin.<br>Botany.         |

(a) During First Term. (b) Second Term. † For Candidates for Honours

\* The student may take at his option French or German in the first two years, or, if a Theological Student, Hebrew.

Library open every day, 9 a.m. to 4 p.m. during session. The Museum will be opened, as arranged by the Principal.

† Decernative Mineralogy, Wednesday, at 4 p.m. Practical Chemistry, at 2 p.m., for 3rd and 4th Years; First Year with the Class in Applied Science.

‡ Optional.

\* The hours in this table are subject to alteration during the Session.



### III. UNIVERSITY BUILDINGS, Etc.

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#### The University Library.

The various libraries of the University now contain about 60,000 bound volumes, besides many valuable pamphlets.

The books have been selected with a view to illustrating the various courses of University study. They are, therefore, to a considerable extent, general in character; and the Committee endeavours to provide for the symmetrical growth of the entire library.

There are, however, several large special collections, besides the departmental libraries. The late Mr. Peter Redpath was, for years before his death, engaged in forming the REDPATH HISTORICAL COLLECTION, which is now of great value, and affords unusual opportunities for the study of English History. An important feature of this collection is a series of 3,500 political and religious tracts, which date from 1601 to about the middle of the present reign.

Abundant materials, bearing upon the History of Canada, have been gathered together. Of these the nucleus is formed by the entire library of the late Mr. Frederick Griffin, whose choice books were, some years ago, bequeathed to the University. This branch of the library is being steadily augmented.

The Medical Library, directly controlled by the Faculty of Medicine, is the largest of the departmental libraries, and is one of the most complete collections of its kind in the Dominion.

About 160 current periodicals, literary and scientific, are subscribed for through the various departments of the University. Besides these, the library regularly receives many Serials, Transactions and Proceedings of Societies. The list of both periodicals and serials is being extended yearly.

A new Card Catalogue of the entire library has been for some time in hand, but is not as yet complete.

In the autumn of 1893, the general library was moved to the noble building erected by the late Mr. Peter Redpath. The building affords ample accommodation for two hundred readers, the reading room being exceptionally spacious and convenient. The reading room is open in the evening, and contains a reference library, and leading English and Foreign periodicals.

Although the library is maintained primarily for members of the University, the Corporation has recently provided for the admission, upon certain conditions, of such persons as may be approved by the Library Committee. It is the desire of the Committee to make the library as useful to the entire community as is consistent with the safety of the books and the general interests of the University.

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## The Peter Redpath Museum.

This building was erected in 1882 by the liberal benefactor whose name it bears. It occupies a commanding position at the upper end of the campus, and besides its central hall and other rooms devoted to the collections, contains, on the ground floor and in the basement, a large lecture theatre, class-rooms and work-rooms.

The general arrangement of the collections is as follows :—

1. The Botanical Room on the ground floor contains the HERBARIUM, consisting of 25,000 specimens of Canadian and exotic plants, and collections illustrating structural and economic botany.

2. On the first floor is a room over the entrance hall, in which are cases containing Archaeological and Ethnological objects, with large slabs of fossil foot-prints on the walls.

3. This room opens into the great Museum Hall, on either side of which are alcoves with upright and table cases containing the collections in Paleontology, arranged primarily to illustrate the successive geological systems, and subordinately to this, in the order of zoological and botanical classification, so as to enable the student to see the general order of life in successive periods, and to trace any particular group through its geological history.

4. At the extreme end of the Hall are placed the collections of Minerals and Rocks, arranged in such manner as to facilitate their systematic study. In the centre of the Hall are economic collections and large casts and models.

5. In the upper story or gallery of the great Hall are placed the zoological collections—the invertebrate animals in table cases in regular series, beginning with the lower forms, the vertebrate animals in upright cases, in similar order. THE PHILIP CARPENTER COLLECTION OF SHELLS is especially noteworthy for its arrangement and completeness.

Details as to the several departments of the Museum are given in the "Museum Guide," and papers or memoirs relating to type specimens in the collections can be obtained from the Museum Assistant. Tickets are issued to students by the Professors in charge of the several departments, and classes of pupils from schools can be admitted on certain days, under regulations which may be learned from the Professors or from the Secretary of the University.

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## Physics Building.

The McDonald Physical Laboratory contains five storeys, each of 8,000 square feet area. Besides a lecture theatre and its apparatus rooms, the Building includes an elementary laboratory nearly 60 feet square; large special laboratories arranged for higher work by advanced students in Heat and Electricity; a range of rooms for optical work and photography; separate rooms for private thesis work by Students; and two large laboratories arranged for research, provided with solid piers and the usual standard instruments. There are

also a lecture room, with apparatus room attached, for Mathematical Physics, a special physical library, and convenient workshops. The equipment is on a corresponding scale, and comprises: (1) apparatus for illustrating lectures; (2) simple forms of the principal instruments for use by the Students in practical work; (3) the most recent types of all important instruments for exact measurement, to be used in connection with special work and research.

The following extract is made from the report for the year 1894-5 of the Physics Building Committee:—

“The work of the year has been mainly devoted to completing the equipment of the Laboratory, and starting the practical work on a systematic basis. Additional cases, tables and other fittings have been obtained, tools and machines for the workshop, mercury stills, vacuum pumps, and other apparatus required in Experimental Physics.

Of the Advanced Practical Work, the greater part hitherto, owing to the arrangement of the Electrical Engineering course, has been confined to Electricity and Magnetism. It may be of some interest, therefore, to give a brief abstract of the work of the last year in this direction, together with a description of the principal electrical standards and instruments of precision in the McDonald Collection

*Resistance Standards.*—We have thirty standard resistance coils of various patterns, including the B.A., the Board of Trade and the German, with a few others, ranging in value from 1,000 ohms to one ten-thousandth, and adapted for various different purposes. These have been tested and compared, and their values are found to agree as closely as could be expected with the Cambridge certificates, and those of the Reichsanstalt and the makers. The temperature coefficients of a few have also been determined. The comparisons have been made chiefly with Nalder's pattern of the Carey-Foster Bridge.

We have also a duplicate of the Fleming Bridge used at Cambridge, recently presented by the Duke of Devonshire.

*RESISTANCE STANDARDS.*—The collection of resistance boxes includes almost all the best types. We have a Thomson-Varley slide-box by Nalder, which has proved extremely useful and accurate. This box has been accurately calibrated throughout. The largest discrepancy between two sets of observations on different dates and at different temperatures is one part in 50,000. The mean divergence less than 1 in 100,000. We are thus in possession of an instrument which can be used for calibrating other boxes with great ease and accuracy. Among the other boxes we may mention: two megohm boxes and four 100,000 ohm boxes of different patterns; a four dial and a six dial P.O. box; and a bar-dial box of Professor Anthony's pattern; also a compensated resistance box with mercury contacts, reading from 0 to 50 ohms continuously by the Carey-Foster method; this is extremely useful for the accurate determination of resistances which cannot be made up of any simple combination of standards, and has been accurately calibrated throughout.

For the comparison and determination of small resistances, we have a Kelvin

conductivity bridge, and a Lorenz apparatus, with the improvements made by Prof. V. Jones, which is now being completed under his supervision.

**POTENTIAL STANDARDS.**—As potential standards, we have a number of Clark cells of Dr. Muirhead's pattern with attached thermometers, and a dozen of Professor Carhart's with his certificate. These have been frequently tested at various dates by different methods, and are found to agree with each other to about one-tenth of one per cent. The students have also set up a number of cells in accordance with the Board of Trade directions. The agreement of these is considerably closer, and though not of a portable form, they are more convenient for laboratory work.

These have been used for testing and calibrating various types of commercial instruments.

**CURRENT STANDARDS.**—We have a Kelvin composite balance, which can also be used as a voltmeter and wattmeter, and two Siemens dynamometers. The constants of these have been determined by the voltametric method, and found to be accurate to one-half of one per cent. They have been used for calibrating common types of alternate current instruments. We have also a set of 4 large storage cells, with convenient commutators and resistances for furnishing large steady currents for the testing of ammeters and low resistances, and for other purposes. This equipment is similar to that in use at the Board of Trade in England and in the laboratories of some leading instrument makers.

As an absolute current standard we have a duplicate of the Weber electro-dynamometer made by Latimer Clark for the Committee of the British Association, the coils of which were wound by Clerk Maxwell, and used by Lord Rayleigh in his standard experiments. This instrument has been very carefully set up by R. O. King. It has been thoroughly tested and measured, and its constants determined.

**INSULATION AND CAPACITY TESTS.**—For these and other tests we have a suitable collection of delicate reflecting galvanometers of the astatic, ballistic, differential and D'Arsonval types. The most delicate of these has a resistance of 110,000 ohms, and a figure of merit of upwards of 60,000 megohms with a 20 second swing.

We have eight quadrant electrometers of different types, the chief of which have been set up and used for various insulation and other tests. We have also one Kelvin absolute electrometer, and smaller portable electrometers and gauges on the same principle.

As a standard of capacity we have a cylindrical air-condenser of the B.A. pattern. This was measured, cleaned, and set up by H. M. Tory in November, 1893.

Its capacity has not yet been determined absolutely. By comparison with our certificated mica standards, it was found to be nearly one-200th of a microfarad the value intended by the maker.

The mica-standards and subdivided boxes have been carefully compared with



each other and tested for insulation and absorption. They are above the average in quality and accuracy.

For the purpose of studying the behavior of insulators under the influence of long continued and intense electric stress, a subject which is now becoming of importance in connection with the transmission of power at very high voltage, we have in preparation a transformer capable of working up to 100,000 volts, and of sufficient power to give useful, practical results.

**MAGNETIC TESTS.**—Determinations of the dip and horizontal intensity have been made with the Kew instruments in different parts of the laboratory, and of the horizontal intensity with two other types of magnetometer. The values obtained showed a very satisfactory agreement, and were in all cases verified by the local and bifilar variometers. A preliminary magnetic survey with the portable variometers has been made of all the laboratories in which experiments affected by the horizontal intensity are carried on. The results have been of great utility, and show that the precautions taken in erecting parts of the building with copper pipes and heating apparatus were by no means unnecessary, and might even have been extended with advantage to the elementary laboratories. It was also found that the disposition of the motors and machinery at the other end of the building was such as to produce a magnetic disturbance scarcely appreciable for most purposes in the portions devoted to delicate work.

We have also apparatus of various types for testing the magnetic quality of iron and steel. These experiments are mainly carried on in the Engineering Building, but some tests have been made by the magnetometric method for which the Physics Building is more suitable.

Considerable progress has also been made with the equipment for advanced work in Optics, Acoustics and Heat, but little work has as yet been done by the students in these branches owing to the arrangement of the present courses of study. The collection of apparatus is on a corresponding scale to the electrical equipment, and includes several fine and valuable instruments. Among the more interesting pieces recently added or shortly to arrive, we may mention: a set of Ewing Seismographs; a Riefler standard clock; a set of direct-reading electrical thermometers reading to  $.01^{\circ}$  Fahr., which are now being used for determining soil temperatures; a six inch Rowland grating with mountings and accessories by Brashear; a complete set of spectrum and Crooke's tubes by Geissler; mechanical models and apparatus from the Engineering Laboratory and the Instrument Company at Cambridge.

We hope in the course of the summer vacation to be able to make a complete catalogue of the apparatus, and to publish some such list as shall be of use to outside students and experimentalists who may wish to know what facilities our Laboratory may offer for any particular line of research."

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## Chemical Laboratories.

The existing Chemical Laboratories are three in number, and intended to accommodate from sixty to seventy students. They are supplied with the ordinary appliances for practical work, including balances, Laurent polariscope, spectroscopes, gas combustion and melting furnaces, apparatus for electrolytic work, for the determination of molecular weights, etc.

As the space is limited, students wishing to take laboratory classes must apply early for places.

NOTE.—The munificent gift lately announced by Mr. W. C. MacDonald will provide the University with extensive and completely equipped Chemical Laboratories of the most approved and modern type. The erection of the new Laboratory which will contain accommodation also for mining and metallurgical work, will be rapidly proceeded with.

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## Botanical Laboratories.

The Botanical Laboratories occupy the upper floor of the central Arts building.

The laboratory for general Morphology provides table accommodation for fifty students, and is equipped with all the necessary appliances for the practical study of plants, either fresh or dry.

In connection with this laboratory, a large collection of dried plants is maintained, from which material is drawn for practical study.

Each student is supplied with a dissecting microscope, which he is required to return in good order at the close of the session.

The laboratory for Advanced Anatomy at present affords accommodation for ten students. Each table is provided with a complete outfit of instruments and reagents. Provision is also made for accurate micrometric work, and for the production of accurate drawings by means of the camera lucida and Leitz's drawing instrument.

More special instruments, including polariscope, spectroscope and photographic apparatus, afford opportunities for detailed studies in these several directions. Section cutting is provided for by King and Thoma-Jung microtomes, together with all necessary appliances for embedding in accordance with the most recent methods.

Ample provision for material of all kinds is found in the resources of the botanic garden and in a large supply of stock preparations.

An investigator's table held by the University at the Biological Laboratory, Wood's Holl, Massachusetts, is available for such students as may successfully complete the advanced course of the third and fourth years.

## Botanic Garden.

The Botanic Garden occupies a commanding situation at the summit of the Cote des Neiges, distant from the College about one and one-half miles. It covers about nine acres, one-third of which is at present laid out.

The planted area includes a large reserve garden in which plants are grown in quantity for purposes of class room instruction, and the section devoted to the Gamopetalæ. The section embracing the Polypetalæ is now in course of development.

The conservatories embrace a continuous series of houses having a total ground area of 4,600 square feet. They include a camellia house 20 x 60 feet ; a mixed stove 20 x 80 feet ; a greenhouse 20 x 60 feet ; and an Australian house 20 x 30 feet.

The collection comprises an important and somewhat extensive representation of Australasian plants, and type-forms of vegetation from various parts of the world.

During the winter, material for practical study is provided in large quantity to meet the requirements of the College, and of such of the City schools as may have acquired special privileges in this respect.

Students are admitted to the garden and allowed the use of material for practical study, under special conditions. For this purpose, students' tickets are issued at the opening of the session to all those taking the course in Botany.

The public are admitted to the garden without charge, every day, except Sunday.

## Petrographical Laboratory.

The Petrographical Laboratory containing the chief rock collections of the University is situated in the east wing of the Arts building, and is arranged for the use of Honour and Graduate students. It is provided with a number of petrographical microscopes by Seibert and Crouch, as well as with models, sets of thin sections, electro-magnets, heavy solutions, etc., for petrographical work.

For advanced work and petrographical investigation Dr. Adams' extensive private collection of rocks and thin sections is available for purposes of study and comparison.

## Observatory.

Latitude, N.  $45^{\circ} 30' 17''$ . Longitude,  $4^h 54^m 18^s. 65$ .

Height above sea level 187 ft.

METEOROLOGICAL OBSERVATIONS are made every fourth hour, beginning at 3<sup>h</sup> 0<sup>m</sup> Eastern standard time ; also at 8<sup>h</sup> 0<sup>m</sup> and 20<sup>h</sup> 0<sup>m</sup>. An independent series of bi-hourly temperature observations is also made. The principal instruments

employed are two standard mercurial barometers ; one Kew standard thermometer ; two Pastorelli thermometers ; one maximum thermometer ; one minimum thermometer ; one set of six self-recording thermometers, with controlling clock, battery, etc. ; two anemometers ; one wind vane (wind-mill pattern), one anemograph, with battery, etc. ; one sunshine recorder ; one rain-band spectroscope ; and one rain gauge.

The Anemometer and Vane are on the summit of Mount Royal, at a point about three-quarters of a mile northwest of the Observatory. They are 57 feet above the surface of the ground and 810 feet above sea level.

Soil temperatures are observed, in co-operation with the Physical Laboratory, by means of platinum thermometers at depths ranging from one inch to nine feet.

THE ASTRONOMICAL EQUIPMENT consists of:—The Blackman Telescope (6¼ in.) ; a photoheliograph (4½ in.) ; a 3¼ in. transit, with striding level, etc. ; a prismatic (8 c.m.) transit instrument also arranged as a zenith telescope, a 2 in. transit in the prime vertical ; two collimating telescopes ; one sidereal clock ; one mean time clock ; one sidereal chronometer ; one mean time chronometer ; one chronograph ; batteries, telegraph lines and sundry minor instruments.

Observations for clock errors are made on nearly every clear night. Time exchanges are regularly made with the Toronto Observatory. Time signals are distributed throughout the city by means of the noon time-ball, continuous clock signals, and the fire alarm bells ; and to the country, through the telegraph lines.

Observations of sun spots, for position and area, are made with the Blackman telescope and the photoheliograph.

The longitude of the Observatory was determined in 1892 by direct telegraphic connection with Greenwich and with exchange of observers and instruments. The position is believed to be the most accurately determined in America.



## Part Second.

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The next session of this Faculty will begin on September 15th, 1896, and will extend to April 30th, 1897.

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### I. REGULATIONS FOR ENTRANCE.

Students in the Faculty of Arts are classified as Undergraduates or Partial Students.

#### Undergraduates.

Undergraduates alone can proceed to the degree of B.A. Candidates for admission to the First Year, as Undergraduates, are required to pass the First Year Entrance Examination. Two examinations for entrance are held in each year, as follows :

(1) That held in the first week of June, concurrently with the examinations for Associate in Arts.

NOTE TO HEADS OF SCHOOLS.—Candidates for entrance may present themselves in June at McGill College ; or papers may be sent to schools at a distance, if the following conditions are complied with.

(a) The names of Deputy Examiners must be submitted for approval, to the Secretary of the University, on or before May 1st ; and (b) the application must be accompanied by a list of candidates.

(2) That held at the opening of the session, on September 15th, and following days, in McGill College alone.

The following regulations with regard to the First Year Entrance Examination are now in force :—

1. Any candidate who fails in one and not more than one subject at the September Entrance Examination may pass an equivalent examination at Christmas, or at the following Sessional Examinations, in the precise part of the subject in which he failed. In this regulation, Classics, Mathematics, and English are each regarded as a single subject.

2. The Entrance Examinations for the First Year will be held twice only in the year, viz., on the days in June and September

appointed in the Calendar. Special arrangements may be made for the examination of candidates who are prevented from complying with the above regulation by severe illness or domestic affliction.

As the examination is intended as a test of qualification for admission to the classes of the University, certificates of passing are not granted except to those who subsequently attend lectures. Candidates who have passed the examination are not matriculated until they have paid all the prescribed fees for the session and complied with the other University regulations. (See the Directions given, p. 38.)

## First Year Entrance Examination.

### For Passing only.

Examinations begin on June 1st in McGill College and local centres ; on September 15th in McGill College only.

**Greek.**—XENOPHON, *Anabasis*, Book I. ; Greek Grammar.

**Latin.**—CÆSAR, *Bell. Gall.*, Books I. and II. ; and VIRGIL, *Aeneid*, Book I. Latin Grammar.

In June, 1897, and thereafter, the Examination will include, in both Latin and Greek, Translation at Sight and Prose Composition (sentences or easy narrative, based upon the prescribed prose text).

At the September, but not at the June, examination, other works, in Greek or Latin equivalent to those specified may be accepted, if application be made to the Professors of Classics at least a fortnight before the day of examination.

**Mathematics.**—Arithmetic, including a knowledge of the Metric system ; Algebra to Quadratic Equations (inclusive) as in Colenso ; Euclid's Elements, Books I., II., III.

**English.**—Writing from Dictation. *Grammar.*—A paper on English Grammar, including Analysis. The candidate will be expected to show a good knowledge of Accidence, as treated in any grammar prepared for the higher forms of schools. A similar statement applies to *grammatical* Analysis, in which the nomenclature used by MASON will be preferred. The complete English Grammar published in SONNENSCHN'S PARALLEL GRAMMAR SERIES may be regarded as giving the minimum amount of information expected. *English History.*—The candidates will be required to give the chief details of leading events, and to know the genealogy of the various royal lines. While any text-book written for the upper forms of schools may be used in preparation for the examination, GARDINER'S Outline of English History (Longmans) is recommended. *Composition.*—The candidate will write a short essay on a subject given at the time of the examination.

**French.**—Grammar up to the beginning of Syntax. An easy translation from French into English; along with this in 1897, and thereafter, the reproduction in French of an easy story told or read in French. Dictation.

Candidates unable to take French are not excluded, but will be required to join the class which begins the study of German after entrance. N.B.—*This regulation will not be in force after 1896.*

FOR CHANGES IN SUBJECTS OF EXAMINATION FOR 1897, SEE P. 62.

Candidates who at the examination for Associate in Arts have passed in the above subjects are admitted as Undergraduates.

June  
Candidates

Candidates who fail in one or more subjects at the June examination, or who have taken part only of the examination and present themselves again in the following September, will be exempted from examination in those subjects only in which the Examiners may have reported them as specially qualified.

At the June examination, candidates from Ontario may present an equivalent amount from the books prescribed for the Junior Matriculation Examination of the University of Toronto.

Ontario  
Candidates

The Matriculation or Junior Leaving Examination accepted by the Universities of Ontario is accepted by the Faculty, in so far as the subjects of their programme satisfy the Examiners of the Faculty, *i.e.*, when the subjects taken are the same as, or equivalent to, those required in McGill University.

In the case of Candidates from Ontario, Second Class non-professional certificates will be accepted *pro tanto* in the Examination.

For qualifications required of Normal School Students, see Normal School Regulations.

Normal  
School  
Candidates

### Higher Examination for First Class, Second Class and Passing.

This Examination will be held on September 15th and following days in McGill College only. The First Year Exhibitions will be awarded in accordance with the results.

**Greek.**—HOMER, *Iliad*, Bk. IV. or VI.; XENOPHON, *Anabasis*, Bk. I. or V. HOMER, *Odyssey*, Bk. VII. or XI.

**Latin.**—CICERO, in *Catilinam*, *Orat.* I. and II., or, HORACE, *Odes*, III. and IV. CÆSAR, *Bell. Gall.*, Bks. I. and II. or V. and VI.; VIRGIL, *Aeneid*, Bk. I. or III.

A paper on Greek and Latin Grammar.

Translation at sight from the easier Latin authors. Abbott's *Arnold's Greek Prose Composition*, Exercises I to 25. Collar's *Practical Latin Composition*, Pts. III. and IV., or an equivalent, such as *Arnold's Latin Prose Composition*.

In June, 1897, and thereafter, the Examination will include Prose Composition and Translation at Sight in both Greek and Latin.

**Mathematics.**—Euclid, Books I., II., III., IV.; Algebra to end of Harmonical Progression (Colenso); Arithmetic.

**English.**—*Grammar.*—An advanced knowledge of this subject will be required, and, in addition, some acquaintance with the historical development of English, as illustrated in common and important word-forms. The candidate is recommended to read MASON'S English Grammar.

FOR CHANGES IN SUBJECTS OF EXAMINATION FOR 1897, SEE P. 62.

The First Year Exhibitions will not be awarded unless an adequate standard of merit has been reached; but in awarding the Exhibitions of higher value to the successful candidates, the results of an examination in the following subjects will also be taken into account:—

1. A retranslation into Latin of an English version of some passages from one of the easier Latin Prose writers. (For specimens, see Smith's *Principia Latina*, Part V.)

2. Euclid, Book VI. (omitting Props. 27, 28, 29), with Defs. of Book V.

3. English:—An Examination upon one of Shakspeare's plays. For 1896—Macbeth.

4. French:—Syntax and translation from English into French, in addition to the entrance course.

For particulars concerning First Year Exhibitions, see p. 60.

## Second Year Entrance Examination.

Candidates may qualify for entrance into the Second Year by passing one of the following examinations, namely: the First Year Sessional Examination, held in the previous April, or the Second Year Ordinary Entrance Examination, held in September, or the Second Year Exhibition Examination which is likewise held in September.

## Second Year Ordinary Entrance Examination.

This examination begins September 15th, and is held at McGill College only.

*Subjects:—*

**Greek.**—HOMER, *Iliad*, Book VI.; XENOPHON, *Anabasis*, Book I.  
Grammar and Prose Composition.



**Latin.**—VIRGIL, *Aeneid*, Book VI.; CICERO, *Orations against Catiline*; Grammar and Prose Composition.

Other works in Greek or Latin equivalent in amount to those specified may be accepted by the Professors of Classics, if application be made to them at least a fortnight before the day of examination.

**Euclid.**—Books I., II., III., IV., VI., with defs. of Book V. (Omitting Propositions 27, 28, 29 of Book VI.)

**Algebra.**—To end of Quadratic Equations (as in Colenso's *Algebra*).

**Trigonometry.**—Galbraith and Haughton's *Trigonometry*, Chaps. 1, 2, 3, 4, 6, to beginning of numerical solution of plane triangles.

**Arithmetic.**—Elementary Rules, Proportion, Interest, Discount, etc., Vulgar and Decimal Fractions, Square Root, Metric System.

**English.**—The subjects are the same as those at present prescribed for the First Year Examination for Passing, but the examination is of a more advanced character.

**French.**—The Examination will be conducted on lines similar to those mentioned for the First Year, but a higher standard will be exacted, the minimum requirement being a knowledge sufficient to enable the Candidate to join the regular class.

**Chemistry.**—The Chemistry of the non-metallic Elements and of the more common metals.

[N.B.—Candidates unable to pass in French or German are not excluded, but are required to begin German, and to continue the study of that language for two years. Not in force after 1896. See p. 35.]

FOR CHANGES IN SUBJECTS OF EXAMINATION FOR 1897, SEE P. 62.

**Medical Students.—Partial Students.—Students of other Universities.**

**Medical Students** and Candidates for entrance into the first year of the Faculty of Medicine may pass in the above entrance examinations.

**Partial Students**—Candidates for admission as Partial Students may attend any class open to them, without previous examination, provided they give the Professor satisfactory evidence of their ability to proceed with the work of the course.

**Students of other Universities** may be admitted, on production of certificates, to a like standing in this University, after examination by the Faculty.

## General Regulations.

Every student is expected to state at entrance the name of the religious denomination to which he belongs, and of the Minister under whose care he desires to be placed.

Lists of the students belonging to the several denominations with the information thus given shall be sent, at the beginning of each session as soon as the classes are fully formed, to the Secretary's office, where they shall be available for reference.

Every student is required to sign the following

### Declaration.

"I hereby declare that I will faithfully observe the statutes, rules and ordinances of this University of McGill College to the best of my ability."

## Directions to Candidates for Matriculation or Admission.

Candidates are required:—

(a) To present themselves to the Dean at the beginning of the session, and fill up a form of application for matriculation or admission.

(b) To pass or to have passed the required examinations (p. 34). Candidates claiming exemption, according to the regulations above given, from examination in any subject on the ground of examinations previously passed, must present certificates of standing in the latter. Candidates must pay a fee of \$5 before admission to the entrance examination in September. (See Fees, p. 56.)

(c) To procure tickets from the Registrar (p. 57), and to sign the declaration above given.

(d) To present their tickets to the Dean. (Fine, etc., for delay stated on p. 57.)

(e) To provide themselves with the Academic dress (p. 56.)

## II. REGULATIONS FOR DEGREES IN ARTS.

### REGULATIONS FOR THE DEGREE OF B.A.

After passing the First Year Matriculation Examination, an Undergraduate, in order to obtain the Degree of B.A., is required to attend regularly the appointed courses of lectures for four years, and to pass two Examinations in each year, viz., at Christmas and in April. If he fail at any one of these Examinations, he must pass it before being allowed to proceed with his course. Undergraduates are arranged in Years, from First to Fourth, according to their academic standing.

## 1. Ordinary Course for the Degree of B.A.

*N. B. The Roman numerals used in the following conspectus have no reference to any other parts of the Calendar—whereas the Arabic numerals refer to the numbering of the courses on pp. 4-32; for example, Greek, 2. refers to the second course given under the head of Classical Literature and History, p. 4.*

### First Year.

- I. GREEK, 1.
- II. LATIN, 1.
- III. ENGLISH LITERATURE, 1.
- IV. FRENCH, 1.
- V. GERMAN, 1. (Optional—instead of IV.)
- VI. HEBREW, 1. (Optional—instead of IV.)
- VII. MATHEMATICS, 1.
- VIII. CHEMISTRY, 1 (Optional in 1896-97) (Medical Students may substitute one-half of the First Year Chemistry course of their Faculty.)

### Second Year.

- IX. GREEK, 2.
- X. LATIN, 2.
- XI. FRENCH, 2.
- XII. GERMAN, 2. (Optional—instead of XI.)
- XIII. HEBREW, 2. (Optional—instead of XI.)
- XIV. MODERN HISTORY, 1.
- XV. MENTAL AND MORAL PHILOSOPHY, 1.
- XVII. MATHEMATICS, 2.
- XVIII. MATHEMATICAL PHYSICS, 1. (Medical Students may substitute the second half of the Chemistry course of their Faculty for XV and XVIII.)
- XIX. BOTANY, 1. (Medical Students may substitute the Botany course of their Faculty.)

### Third Year.

- XX. GREEK, 3.
- XXI. LATIN, 3. (Optional—instead of XX.)
- XXII. MATHEMATICAL PHYSICS, 2.

*(In addition to the above, the Student will take one subject from Div. (a), a second from Div. (b), and a third from either.)*

**Div. (a).**

- XXIII. GREEK, 3. (If XXI has been taken.)  
 XXIV. LATIN, 3. (If XX has been taken.)  
 XXV. ENGLISH AND RHETORIC, 3.  
 XXVI. MENTAL PHILOSOPHY 2.  
 XXVII. FRENCH, 3. (If IV and XI have been taken.)  
 XXVIII. GERMAN, 3. (If V and XII have been taken.)  
 XXIX. HEBREW, 3.

**Div. (b).**

- XXX. OPTICS, 3. AND DESCRIPTIVE ASTRONOMY, 3 (Open to Students who have taken XXII.)  
 XXXI. EXPERIMENTAL PHYSICS, 4. (Open to Students who have taken XXII.)  
 XXXII. LABORATORY COURSE IN PHYSICS, 6.  
 XXXIII. BOTANY, 2a.  
 XXXIV. ZOOLOGY, 1. Physiology and Histology, or Anatomy and Practical Anatomy, may, by Medical Students only, be substituted for two courses of this Division.

**Fourth Year.**

- XXXV. GREEK, 4.  
 XXXVI. LATIN, 4 (Optional—instead of XXXV.)  
 XXXVII. MORAL PHILOSOPHY, 3.  
 XXXVIII. MATHEMATICAL PHYSICS, 2. (*Optional instead of XLV.*)  
*In addition, the Student will take one subject from Div. (a),  
 a second from Div. (b), and a third from either.*

**Div. (a).**

- XXXIX. GREEK, 4. (If XXXVI has been taken.)  
 XL. LATIN, 4 (If XXXV has been taken.)  
 XLI. ENGLISH LITERATURE, 4.  
 XLII. FRENCH, 4 (If XXVII has been taken.)  
 XLIII. GERMAN, 4 (If XXVIII has been taken.)  
 XLIV. HEBREW, 4.

**Div. (b).**

- XLV. ASTRONOMY, (4) AND OPTICS, 3. (If XXII has been taken.)  
 XLVI. EXPERIMENTAL PHYSICS, 5.  
 XLVII. LABORATORY COURSE IN PHYSICS, 7.  
 XLVIII. BOTANY, 2b.  
 XLIX. MINERALOGY AND GEOLOGY, 1.

N.B.—Students claiming exemptions cannot count XLV and XLVI as subjects for the B. A. Examination, unless they have taken XXII.



For details of each subject, see Courses of Lectures, pp. 4,—23.

A Candidate who seeks to obtain a B.A. Ordinary Degree of the First Class must fulfil the following conditions. He must not only obtain the required aggregate of marks (viz., three-fourths of the maximum), but he must also obtain First Class standing in three of the departments, and not less than Second Class in the remainder.

### Declaration.

Every Candidate for the Degree of B.A. is required to make and sign the following declaration :

“Ego —— polliceor sancteque recipio me pro meis viribus studiosum fore communis hujus Universitatis boni, et operam daturum ut ejus decus et dignitatem promoveam.”

### *Notes on the Ordinary Course for B. A.*

### Additional Courses.

Third and Fourth Year Students are not restricted to the choice of two distinct subjects in one of the above divisions. They may select one subject only, together with an ADDITIONAL COURSE in the same subject, or in any other of the subjects which they have chosen, in which such Additional Course may be provided by the Faculty ; the above rules, however, must be complied with, and Students must have been placed in the First Class in the corresponding subject at the preceding Sessional Examinations, viz. :—Intermediate or Third Year, according to standing.

The Additional Course is intended to be more than equivalent, in the amount of work involved, to any of the other subjects in the Division.

(For details of Additional courses provided, see p. 43.)

### French and German.

Undergraduates are required to study either French or German for the first two years,—the same language in each year.

Any Student failing to pass the Examination at the end of the Second Year will be required to pass a Supplemental Examination, or to take throughout the following Session the language in which he has failed.

Students may take Hebrew instead of French or German.

### Hebrew.

For arrangements enabling Students in Medicine or Applied Science to take the course in Arts also, and obtain B.A., with B. Ap. Sc. or M.D., in six years, see p. 50.

### Professional Students.

Undergraduates who have been previously Partial Students, and have in this capacity attended a particular Course or Courses of Lectures, may, at the discretion of the Faculty, be exempted from further attendance at these Lectures ; but no distinction shall in consequence be made between the examination of Undergraduates and of those regularly attending Lectures.

### Partial Students.

## 2. Honour Courses.

HONOURS of First, Second or Third Rank will be awarded to successful candidates, in any Honour Course established by the Faculty, provided they have passed creditably the ordinary Examinations in all the subjects proper to their year.

The Honour lectures are open to Undergraduates only, and no Undergraduate is permitted to attend them unless (a) he has been placed in the First Class in the subject at the preceding Sessional Examination, if there be one, (b) has satisfied the Professor that he is otherwise qualified, and (c) while attending lectures makes progress satisfactory to the Professor. In case his progress is not satisfactory, he may be notified by the Faculty to discontinue attendance.

### Candidates for Honours in the Second Year.

Honour  
Exemp-  
tions.

A Candidate for Honours in the Second Year, who has obtained Honours in the First Year, may claim exemption from the lectures and examinations in Modern Languages, or Hebrew, or Botany. He must, however, inform the Dean at the beginning of the Session that he intends to claim exemption from a particular course.

### Candidates for Honours in the Third Year.

A Candidate for Honours in the Third Year must, in order to obtain exemptions, have passed the Intermediate Examination, and must in the Examinations of the Second Year have taken First Rank Honours, if Honours be offered in the subjects, or if not, First Class at the Ordinary Sessional Examinations in the subject in which he proposes to compete for Honours, and stand higher than Third Class in the majority of the remaining subjects; such Candidate shall be entitled in the Third Year to exemption from lectures and examinations in any one of the subjects of the Year (see pp. 39, 40) except that in which he is a Candidate for Honours. A Candidate for Honours in the Third Year who has failed to obtain Honours shall be required to take the same examinations for B.A. as the ordinary Undergraduate.

### Candidates for B.A. Honours.

A Student who has taken Honours of the first rank in the Third Year, and desires to be a Candidate for B.A. Honours, shall be required to attend two only of the courses of lectures given in the ordinary departments, and to pass the two corresponding examinations only, at the ordinary B.A. Examination. A candidate, however, who at the B.A. Examinations obtains Third Rank Honours, will not be allowed credit for these exemptions at the end of the Session, unless the Examiners certify that his knowledge of the whole Honour Course is sufficient to justify it. A Student who has taken Second Rank Honours in the Third Year, and desires to be a candidate for B.A. Honours in the same subject, shall be allowed to continue in the Fourth Year the study of the same depart-

ments that he has taken in the Third Year, but shall be required to take the same number of subjects as in the Ordinary Course.

NOTE.—For subjects of Ordinary Course see pp. 39-40.

## Honour and Additional Courses.

(N.B.—The numbers which stand after the Academic years refer to the corresponding numbers of the courses given on pp. 4-23.)

### 1. Classical Literature and History.

THIRD YEAR HONOURS. Greek, 5.  
Latin, 5.

FOURTH YEAR HONOURS. Greek, 6.  
Latin, 6.

### 2. English Language and Literature.

THIRD YEAR HONOURS, 6, 8, 10, 12, 14.  
THIRD YEAR ADDITIONAL, 6 or 10.  
FOURTH YEAR HONOURS, 5, 7, 9, 11, 13, 15.  
FOURTH YEAR ADDITIONAL, 7 or 11 or 15.

### 3. French.

THIRD YEAR HONOURS, 5.  
FOURTH YEAR HONOURS, 6.

### 4. German.

THIRD YEAR HONOURS, 5*a* and 6*b*.  
THIRD YEAR ADDITIONAL, 5*a*.  
FOURTH YEAR HONOURS, 6*a* and 6*b*.  
FOURTH YEAR ADDITIONAL, 6*a*.

### 5. Semitic Languages.

THIRD YEAR HONOURS, 5*a* and 5*b*.  
THIRD YEAR ADDITIONAL, 5*b* without Literature.  
FOURTH YEAR HONOURS, 6*a* and 6*b*.  
FOURTH YEAR ADDITIONAL, 6*b* without Literature.

### 6. History.

THIRD AND FOURTH YEAR HONOURS, 2, 5.

### 7. Mental and Moral Philosophy.

THIRD YEAR HONOURS, 4.  
FOURTH YEAR HONOURS, 5, 6.

### 8. Mathematics and Physics.

FIRST YEAR HONOURS, 5.

SECOND YEAR HONOURS, 6.

THIRD YEAR HONOURS, 7, 8.

FOURTH YEAR HONOURS, 8, 9, 10, 11.

### 9. Mineralogy.

THIRD YEAR HONOURS, 8, 10.

FOURTH YEAR HONOURS, 9.

### 10. Chemistry.

THIRD YEAR ADDITIONAL, 3, 5.

FOURTH YEAR ADDITIONAL, 4, 6,

*Courses 2 (Second Year) and 7 (Fourth Year) and optional.*

### 11. Zoology.

FOURTH YEAR ADDITIONAL, 4.

### 12. Geology.

FOURTH YEAR HONOURS, 2, 3, 4, 5, 6.

*NOTE.—By an Order of the Lieutenant-Governor of Ontario in Council Honours in this University confer the same privileges in Ontario as Honours in the Universities of that Province as regards certificates of eligibility for the duties of Public School Inspectors, and as regards exemption from the non-professional Examination of Teachers for first-class Certificates for Grades "A and B."*

## 3. Regulations for the Degree of M.A.

1. A Candidate must be a Bachelor of Arts of at least three years standing.

### Thesis.

2. He is required to prepare and submit to the Faculty a thesis on some literary or scientific subject, under the following rules:—

(a) The subject of the thesis must be submitted to the Faculty before the thesis is presented.

(b) A paper read previously to any association, or published in any way, cannot be accepted as a thesis.

(c) The thesis submitted becomes the property of the University, and cannot be published without the consent of the Faculty of Arts.

(d) The thesis must be submitted before some date to be fixed annually by the Faculty, which date must not be less than two months before the Candidate proceeds to the Degree.

*N.B.—The last day in the session of 1895-97 for sending in Theses for M.A. will be Jan. 30th, 1897.*



### Examinations.

3. All Candidates, except those who have taken First or Second Rank B. A. Honours, or have passed First Class in the Ordinary Examinations for the Degree of B.A., are required to pass an examination also, either in Literature or in Science, as each Candidate may select.

(a) The subjects of the Examination in *Literature* are divided into two groups as follows:—

**Group A.**—LATIN, GREEK, HEBREW.

**Group B.**—FRENCH, GERMAN, ENGLISH.

(b) The subjects of the Examination in *Science* are divided into three groups:—

**Group A.**—PURE MATHEMATICS (Advanced or Ordinary), MECHANICS (including Hydrostatics), ASTRONOMY, OPTICS.

**Group B.**—GEOLOGY and MINERALOGY, BOTANY, ZOOLOGY. CHEMISTRY.

**Group C.**—MENTAL PHILOSOPHY, MORAL PHILOSOPHY, LOGIC, HISTORY OF PHILOSOPHY.

(c) Every candidate in Literature is required to select for Examination two subjects out of one group in the *Literature* section, and one out of the other group in the same section. Every Candidate in Science is required to select two out of the three groups in the *Science* section; and in one of the groups so chosen to select for Examination two subjects, and in the other group one subject.

(d) One of the subjects selected as above will be considered the principal subject (being so denoted by the candidate at the time of application), and the other two as subordinate subjects.

(e) The whole examination may be taken in one year, or distributed over two or three years, provided the examination in any one subject is not divided.

For further details of the examination, application must be made to the Faculty before the above date. For fees, see p. 56 (In case of failure, the candidate may present himself in a subsequent year without further payment of fees.)

NOTE.—Candidates who obtained the degree of B.A. before 1884, may proceed to the degree of M.A. under the regulations in force previous to 1884.

## Lectures to Bachelors of Arts.

Lectures are open to Bachelors of Arts who are candidates for M.A., the sessional examinations corresponding to these lectures being reckoned as parts of the M. A. examination. The subjects are Greek, Latin, English, French, German, History, Mental and Moral Philosophy, Chemistry, Botany, Geology and Mineralogy.

### 4. Regulations for the Degree of LL.D.

This degree is intended as a recognition of special study by Masters of Arts in some branch of Literature or Science. The thesis or short printed treatise referred to below is regarded as the chief test of the candidate's mastery of the subject he has chosen. A very wide range of choice is allowed in order to suit individual tastes.

The following are the regulations :—

1. Candidates must be Masters of Arts of at least twelve years standing. Every candidate for the Degree of LL.D. in Course is required to prepare and submit to the Faculty of Arts, not less than three months before proceeding to the degree, twenty-five printed copies of a thesis on some Literary or Scientific subject *previously approved by the Faculty*, possessing such a degree of Literary or Scientific merit, and giving evidence of such originality of thought or extent of research as shall, in the opinion of the Faculty, justify recommendation for that degree.

*N.B.—The subject should be submitted before the Thesis is written.*

2. Every Candidate for the Degree of LL.D. in Course is required to submit to the Faculty of Arts, with his thesis, a list of books treating of some one branch of Literature or of Science, satisfactory to the Faculty, in which he is prepared to submit to examination, and in which he shall be examined, unless otherwise ordered by vote of the Faculty. For fees, see p. 56.

## 5. Examinations.

### (A) College Examinations.

#### For Students of McGill College only.

1. There are two examinations in each year, viz., at Christmas and in April. Successful students are arranged in three classes in each College year.

In the Fourth Year only, there is no Sessional Examination : the University Examination for B.A. takes its place.

2. Students who fail in any subject at the Christmas Examinations are required, if permission be obtained from the Faculty, to pass a Supplemental Examination on that subject before admission to the Sessional Examinations.

3. Undergraduates who fail in one subject at the Sessional Examinations of the First or of the Second Year are required to pass a Supplemental Examination therein. Should they fail in this, they must in the following Session attend the Lectures and pass the Examination in it, in addition to the regular course, or pass the Examination only, without attending Lectures, at the discretion of the Faculty.

4. Failure in two or more subjects at the Sessional Examinations of the First or of the Second Year, or in one subject at the Third Year Sessional Examinations, involves the loss of the Session. The Faculty may permit the student to recover his standing by passing a Supplemental Examination at the beginning of the following Session. For the purpose of this Regulation, Classics and Mathematics are each regarded as two subjects.

5. A list of those to whom the Faculty may grant Supplemental Examinations will be published after the examination. The time for the Supplemental Examination will be fixed by the Faculty : the examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of \$5.

### (B) University Examinations.

**For Students of McGill College and of Colleges affiliated in Arts.**

#### I. For the Degree of B.A.

There are three University Examinations : The MATRICULATION, at entrance ; the INTERMEDIATE, at the end of the Second Year ; and the FINAL, at the end of the Fourth Year.

1. The subjects of the Matriculation Examination are stated on p. 34.

2. In the Intermediate Examination, the subjects are Classics, Pure Mathematics, Logic, and Modern History or English Literature, with one Modern Language, or Botany. Students are allowed to take Hebrew instead of a Modern Language. The subjects of the examination in 1897 are as follows :—

### Intermediate.

**Greek.**—THUCYDIDES (Moore's Easy Selections, Longmans); SOPHOCLES, Ajax. Prose Composition and Translation at sight of Greek (easy narrative) into English. General questions will also be set,—in History, on the Period of Athenian Supremacy (Cox's Athenian Empire, Longmans' Epochs of Ancient History), and in Literature on the outlines as contained in JEBB'S Primer of Greek Literature (Macmillan).

**Latin.**—CICERO, Second Philippic; VIRGIL, Aeneid, Book IX. Latin Prose Composition and Translation at Sight of Latin into English; History, from the Tribune of Gaius Gracchus to the Battle of Actium (Shuckburgh's History of Rome, Macmillan); Literature: Wilkins Primer (Macmillan).

**Mathematics.**—Arithmetic.

Euclid, Books I., II., III., IV., VI., and defs. of Book V.

Algebra, to Quadratic Equations inclusive (as in Colenso).

Trigonometry, including use of Logarithms.

**Logic.**—JEVONS, Elementary Lessons in Logic.

**English.**—(For affiliated colleges).—SPALDING'S History of English Literature. LODGE'S History of Modern Europe, 1789-1878. Essay on a subject to be given at the time of the Examination.

**European History.**—(For McGill College Students) as on p. 14.  
With one of the following:—

**Botany.**—Structural and Systematic Botany, as in GRAY'S Text-Book, with descriptive analysis of plants.

**French.**—SANDEAU, Mlle. de la Seiglière. HALÉVY, L'Abbé Constantin. MÉRIMÉE, Carmen. Contanseau:—Précis de la Littérature française from the beginning to the XVIIIth century. Translation into French:—Rasselas. Grammatical questions.

**German.**—VANDERSMISSEN AND FRASER, German Grammar; JOYNES, German Reader; FREYTAG, Die Journalisten; UHLAND, Ballads and Romances (Macmillan's Foreign School Classics) JENSEN, Die braune Erica. Translation at Sight; Dictation; Colloquial exercises.

**Hebrew.**—Genesis—chap. IV. to VIII. Exodus—XV. Exercises: Hebrew into English, and English into Hebrew. Syntax. Reading of the MASORETIC notes, the Septuagint version and the Vulgate.

3. For the Final or B.A. Ordinary Examination the subjects appointed are the obligatory subjects of the Third and Fourth Years,



viz., Latin or Greek ; Mathematical Physics (Mechanics and Hydrostatics, or Astronomy and Optics) ; Moral Philosophy ; and those three subjects which the Candidate may have selected in the Third and Fourth Years. (See pp. 39-40.)

The subjects in detail for 1897 are as follows:—

### Final.

**Greek.**—PLUTARCH, Life of Demosthenes ; AESCHYLUS, Persae ; ARISTOPHANES, Plutus. Composition and Translation at Sight ; General Paper on History, Literature and Antiquities.

**Latin.**—TACITUS, Histories, Book I ; HORACE, Selected Satires and Epistles ; JUVENAL, Selected Satires. Composition and Translation at Sight ; General Paper on History, Literature and Antiquities.

**Mathematical Physics.**—Mechanics and Hydrostatics, as in LONEY'S Mechanics and Hydrostatics ; or Optics and Astronomy, as in GALBRAITH and HAUGHTON, or Brinkley.

**Mental and Moral Philosophy.**—MURRAY'S Introduction to Ethics.

**Natural Science.**—(a) Mineralogy and Geology, or (b) Botany. Practical Geology and Palæontology (Additional) ; or Practical Chemistry (Additional).

**Experimental Physics.**—Electricity and Magnetism. (See courses of Lectures, p. 19.)

**History.**—(For affiliated Colleges.) MYERS, Mediæval and Modern History ; BRYCE, Holy Roman Empire (omit Chaps. 6, 8, 9, 13, and Supplementary Chapter).

**English Literature.**—(for McGill College.) The Course on English Literature for the Fourth Year, p. 8.

**French.**—The Course on French for the Fourth Year, p. 11.

**German.**—The Course on German for the Fourth Year, p. 12.

**Hebrew.**—JOB, Chap. I. to VI. ; MALACHI ; PSALMS XLI. to XLV. GESENIUS, Grammar ; HARPER, Elements of Syntax ; Reading of the Masoretic notes, the Septuagint Version and the Vulgate. Translation at Sight.

*N.B.*—For Additional Courses on above subjects see pp. 43-44.

## 6. Exemptions for Students in Professional Faculties.

Students of the Third and Fourth Years, matriculated in the Faculties of Law, or Medicine, or Applied Science or in any affiliated Theological College, are entitled to exemption from any one of the Ordinary subjects required in the Third and Fourth Years. (For rule concerning Special Certificates, see p. 52.)

To be allowed these privileges in either year, they must give notice, at the commencement of the session, to the Dean of the Faculty of Arts, of their intention to claim exemptions as Professional Students, and must produce at the end of the session certificates of attendance on a full course of Professional Lectures during the year for which the exemption is claimed.

**Medicine.** Students registered in the Faculty of Medicine are allowed the following additional privileges:—

In the First and Second Years in Arts, they may substitute certain equivalents for parts of the Ordinary Course. (See p. 39.)

In the Third Year in Arts, they may, if following the full course of the First Year in Medicine, take Physiology and Histology with practical work therein, of Anatomy and Practical Anatomy, as two of the courses under the heading or Science in the Ordinary Course.

Medical Students who have completed the Third Year in Arts and First Year in Medicine are required in the Fourth Year in Arts to take two only of the subjects of the Ordinary Course (or one subject with the Additional Course therein). These subjects must be either in Languages or Literature. Medical Students are recommended to continue in the Third and Fourth Years of the Arts Course subjects they have taken in the First and Second Years.

To secure these privileges, certificates of registration in the Medical Faculty must be presented at the beginning of each year to the Dean of the Faculty of Arts; and at the end of each session in the first two years, certificates of attendance on lectures and of passing the corresponding examinations must also be presented. At the end of the Third and Fourth Years, certificates must be presented to show that the full curriculum of the Medical Faculty for the year has been completed.

**Applied  
Science.**

Students in the Faculty of Applied Science, who have passed the first two years in Arts, are allowed, while pursuing the course in Applied Science, to substitute certain courses in Applied Science for the corresponding courses in Arts, and to distribute the work of the Third and Fourth Years in Arts over three years, so that they may be enabled to take the B.A. Degree at the end of the Fifth Year from entrance. For the details, application may be made to the Dean of the Faculty of Arts. Certificates of attendance, etc., in Applied Science will be required.

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*The above arrangements will enable candidates for the M.D. or B.A. Sc. degrees to pursue the course in Arts also, leading to the B.A. degree, and complete both courses in six years.*

**Literate in Arts.**—A certificate of “LITERATE IN ARTS” will be given along with the professional degree in Medicine or Applied Science, to those who have completed two years study in the Faculty of Arts, and have passed the prescribed examinations.

### **Students of the University attending Affiliated Theological Colleges.**

1. These students are subject to the regulations of the Faculty of Arts in the same manner as other students. **Theological Colleges.**

2. The Faculty will make formal reports to the governing body of the Theological College which any such students may attend, as to :—(1) their conduct and attendance on the classes of the Faculty ; and (2) their standing in the several examinations ; such reports to be furnished after the Christmas and Sessional Examinations severally, if called for.

3. Undergraduates are allowed no exemptions in the course for the Degree of B.A. until they have passed the Intermediate Examination ; but they may take Hebrew in the First or Second Years, instead of French or German.

4. In the Third and Fourth Years they are allowed exemptions, as stated above.

\*Any student who, under any of the above rules, desires to take Experimental Physics is required to take Mechanics and Hydrostatics also, in the Third Year.

## **7. Medals, Prizes, Classing and Certificates.**

1. Gold Medals will be awarded in the B.A. Honour Examinations to Students who take the highest Honours of the First Rank in the subjects stated below, and who shall have passed creditably the Ordinary Examinations for the Degree of B.A., provided they have been recommended therefor to the Corporation by the Faculty on the report of the Examiners :—

**The Henry Chapman Gold Medal**, for Classical Languages and Literature.

**The Prince of Wales Gold Medal**, for Mental and Moral Philosophy.

**The Anne Molson Gold Medal**, for Mathematics and Natural Philosophy.

**The Shakspeare Gold Medal**, for the English Language, Literature and European History.

**The Logan Gold Medal**, for Geology, Mineralogy and Palæontology.

**The Major Hiram Mills Gold Medal**, for a subject to be chosen by the Faculty from year to year.

If there be no candidate for any Medal, or if none of the candidates fulfil the

required conditions, the Medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subject for which the Medal was intended. For details, see announcements of the several subjects below.

**2. Special Certificates** will be given to those Candidates for B.A. who have been placed in the First Class at the ordinary B.A. Examination; have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year; are in the First Class in not less than half the subjects, and have no Third Class. At this examination, no Candidate who has taken exemptions (see p. 50) can be placed in the First Class unless he has obtained First Class in four of the departments in which he has been examined, and has no Third Class.

**3. Certificates of High General Standing** will be granted to those Undergraduates of the first two years who have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year, are in the First Class in not less than half the subjects, and have not more than one Third Class. In the Third Year the conditions are the same as for the Special Certificate for B.A.

**4. Prizes or Certificates** will be given to those Undergraduates who have distinguished themselves in the studies of a particular class, and have attended all the other classes proper to their year.

**5.** His Excellency the Earl of Aberdeen has been pleased to offer a **Gold Medal** for the study of Modern Languages and Literature, with European History, or for First Rank General Standing, as may be announced.

(a) The Regulations for the former are as follows:—

(1) The subjects for competition shall be French and German, together with a portion of the History prescribed for the Honour Course for the Shakspeare Medal. Information concerning the History may be obtained from the Professor of History.

(2) The Course of Study shall extend over two years, viz., the Third and Fourth Years.

(3) The successful Candidate must be capable of speaking and writing both languages correctly.

(4) There shall be examinations in the subjects of the course in both the Third and Fourth Years, at which Honours may be awarded to deserving Candidates.

(5) The general conditions of competition and the privileges as regards exemptions shall be the same as for the other Gold Medals in the Faculty of Arts.



(6) Students from other Faculties shall be allowed to compete, provided they pass the examinations of the Third and Fourth Years in the above subjects.

(7) Candidates desiring to enter the Third Year of the Course, who have not obtained first-class standing at the Intermediate or Sessional Examinations of the Second Year in Arts, are required to pass an examination in the work of the first two years of the Course in Modern Languages, if called on to do so by the Professors.

(8) The subjects of Examination shall be those of the Honour Course in Modern Languages.

(b) The Regulations for the Gold Medal, if awarded for First Rank General Standing, are as follows:—

(1) The successful Candidate must take no exemptions or substitutions of any kind, whether Professional or Honour, in the Ordinary B.A. Examinations.

(2) He shall be examined in the following subjects:—

(a) CLASSICS (both languages); (b) MATHEMATICS, MECHANICS, HYDROSTATICS, OPTICS, ASTRONOMY; (c) MORAL PHILOSOPHY; and any *two* of the following subjects, or any *one* of them with its Additional Course; (d) GEOLOGY, etc.; (e) EXPERIMENTAL PHYSICS; (f) ENGLISH; (g) GERMAN.

(3) His answering must satisfy special conditions laid down by the Faculty.

(4) The same Candidate cannot obtain the Gold Medal for First Rank General Standing and also a Gold Medal for First Rank Honours.

6. The **Neil Stewart Prize** of \$18 is open to all Undergraduates and Graduates of this University, and also to Graduates of any other University, who are students of Theology in some College affiliated to this University. The rules which govern the award of this prize are as follows:—

(1) The Candidate must pass, in the First Class, a thorough examination upon the following subjects: Hebrew Grammar; reading and translation at sight from the Pentateuch, and from such poetic portions of the Scriptures as may be determined.

(2) In case competitors should fail to attain the above standard, the prize will be withheld, and a prize of \$36 will be offered in the following year for the same.

[Course for the present year: Hebrew Grammar (Gesenius); Translation and analysis of Exodus; Isaiah XL. to the end of the book.]

(3) There will be two Examinations of three hours each—one in Grammar and the other in Translation and Analysis.

This Prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, was re-established by the liberality of the late Neil Stewart, Esq., of Vankleek Hill.

**7. Early English Text Society's Prize.**—This prize, the annual gift of the Early English Text Society, will be awarded for proficiency in (1) Anglo-Saxon, (2) Early English before Chaucer.

The subjects of Examination will be :—

(1) The Lectures of the Third and Fourth Years on Anglo-Saxon.

(2) Specimens of Early English, Clarendon Press Series, ed. Morris and Skeat, Part II., A. D. 1298—A.D. 1393. The Lay of Havelok the Dane (Early English Text Society, ed. Skeat).

**8. New Shakspere Society's Prize.**—This Prize, the annual gift of the New Shakspere Society, open to Graduates and Undergraduates, will be awarded for a critical knowledge of the following plays of Shakspere :—

Hamlet ; Macbeth ; Othello ; King Lear.

**9. Charles G. Coster Memorial Prize.**—This Prize, intended as a tribute to the memory of the late Rev. Chas. G. Coster, M.A., Ph.D., Principal of the Grammar School, St. John, N.B., is offered by Colin H. Livingstone, Esq., B.A., to Undergraduates (men or women) from the Maritime Provinces, Nova Scotia, New Brunswick and Prince Edward Island. In April, 1897, it will be awarded to that Undergraduate of the First, Second or Third Year, from the above Provinces, who, in the opinion of the Faculty, has passed the most satisfactory Sessional Examinations, under certain conditions laid down by the donor.

**10. Science Scholarships Granted by Her Majesty's Commission for the Exhibition of 1851.**—These scholarships of the value of £150 a year are tenable for two or, in rare instances, three years. They are limited, according to the Report of the Commission, "to those branches of Science (such as Physics, Mechanics and Chemistry) the extension of which is specially important for our national industries." Their object is not to facilitate ordinary collegiate studies, but "to enable students to continue the prosecution of science with the view of aiding in its advance or in its application to the industries of the country."

Three nominations to these scholarships have already been placed by the Commissioners in 1891 and 1893 at the disposal of McGill University, and have been awarded.

When nominations are offered, they are open to Students of not

less than three years standing in the Faculty of Arts or of Applied Science, and are tenable at any University or at any other Institution approved by the Commission.

11. The names of those who have taken Honours, Certificates or Prizes will be published in order of merit, with mention, in the case of Students of the First and Second Years, of the schools in which their preliminary education has been received.

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## 8. Partial Students.

As will be seen from the announcement in Part First, pp. 4-23, the courses of lectures to which Partial Students are admitted are such as are likely to prove attractive to those who have limited time at their disposal, and wish to enjoy the advantages of that higher instruction which the University offers to all qualified persons.

For conditions of Entrance see p. 37.

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## 9. Attendance and Conduct.

All students shall be subject to the following regulations :—

1. A Class-book shall be kept by each Professor or Lecturer, in which the presence or absence of Students shall be carefully noted : and the said Class-book shall be submitted to the Faculty at all their ordinary meetings during the Session.

2. Each Professor shall call the roll at the beginning of the lecture. Credit for attendance on any lecture may be refused on the grounds of lateness, inattention, neglect of study, or disorderly conduct in the class-room. In the case last mentioned, the student may, at the discretion of the Professor, be required to leave the class-room. Persistence in any of the above offences against discipline shall, after admonition by the Professor, be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

3. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify from the keeping of a session shall in each case be determined by the Faculty.

4. While in the College, or going to or from it, students are expected to conduct themselves in the same orderly manner as in the class-rooms. Any Professor observing improper conduct in the College buildings or grounds may

admonish the student, and, if necessary, report him to the Dean. Without as well as within the walls of the College, every student is required to maintain a good moral character.

5. When students are brought before the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, impose fines, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

6. Any student who does not report his residence on or before November 1st in each year is liable to a fine of one dollar.

7. Any student injuring the furniture or buildings will be required to repair the same at his own expense, and will, in addition, be subject to such other penalty as the Faculty may see fit to inflict.

8. All cases of discipline involving the interests of more than one Faculty, or of the University in general, shall be immediately reported to the Principal, or, in his absence, to the Vice Principal.

[N.B.—All students are required to appear in Academic dress while in or about the College buildings.

At a meeting of the Corporation in April, 1895, it was agreed to request all members of the University to appear in Academic dress at University receptions, Conversaciones, etc

Students are requested to take notice that petitions to the Faculty on any subject cannot, in general, be taken into consideration, except at the regular meetings appointed in the Calendar.]

### III. FEES.

All fees and fines are payable to the Bursar of the College.

#### 1. Undergraduates.—\$37 per session.

Every candidate for the September Matriculation Examination in any Faculty, must pay a fee of \$5 *before admission to the examination*. This will be reckoned as part of the regular fees if he pass, but will not be returned in case of failure.

Matriculation fee for entrance into the Second Year, \$10. (Exigible from those who have failed in the First Year, and re-enter in the Second Year on examination.)

#### 2. Partial Students.—\$8 per session for one course of lectures, including the use of the Library; \$4 per session for each additional course.

Partial Students are also required to pay \$2 yearly for "Athletics and the care of the College grounds," unless they state in writing to the Dean their intention not to use the grounds.

Partial Students taking the full curriculum in any one year pay the same fees as Undergraduates in that year.

N.B.—Every student is required to deposit with the Secretary of the University the sum of \$3 as caution money for damage done to furniture or apparatus, etc.



## Special Fees.

LABORATORY AND PRACTICAL CLASSES, VIZ., CHEMISTRY, BOTANY, PHYSICS.  
each per session (optional)..... \$10 00

No student will be admitted to any Laboratory and Practical Classes except on presentation of his ticket to the Professor.

[A change in the fees for Chemistry and Physics is under consideration.]

|                                                                                                                                                                     |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| ELOCUTION (optional) .....                                                                                                                                          | 3 00  |
| PETROGRAPHY (optional) .....                                                                                                                                        | 5 00  |
| GYMNASIUM (for partial students), optional .....                                                                                                                    | 2 50  |
| SUPPLEMENTAL EXAMINATION, at the regular date fixed by the Faculty .....                                                                                            | 2 00  |
| SUPPLEMENTAL EXAMINATION, when granted at any other time than the regular date fixed by the Faculty .....                                                           | 5 00  |
| FEE FOR A CERTIFICATE OF STANDING, if granted to a student on application .....                                                                                     | 1 00  |
| FEE FOR A CERTIFICATE OF STANDING, if accompanied by a statement of classification in the several subjects of examination.....                                      | 2 00  |
| EXAMINATION FEE for Students of Affiliated Theological Colleges who present themselves for the entrance examination without intending to become Undergraduates..... | 10 00 |
| MATRICULATION CERTIFICATE for Students intending to enter the Medical Faculty .....                                                                                 | 2 50  |

Special fees are additional to the regular fees paid by Undergraduates or Partial Students, but are payable only for the optional classes or objects named above.

N.B.—The lectures in one subject in any one of the four college years constitute a "Course."

All fees for Supplemental Examinations must be paid in the Secretary's office, and the tickets shown to the Dean before the Examination.

The fees must be paid to the Secretary, and the tickets shown to the Dean within a fortnight after the commencement of attendance in each session. In case of default, the student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty, and on payment of a fine of \$2.

[All fines are applied to the purchase of books for the Library.]

**Graduates in Arts** are allowed to attend, without payment of fees, all lectures, except those noted as requiring a special fee.

|                                |          |
|--------------------------------|----------|
| FEE FOR THE DEGREE OF M.A..... | \$10.00* |
| “ “ “ LL.D.....                | 50.00*   |

\* A Bachelor of Arts or a Master of Arts intending to proceed to a higher Degree is required, *in addition* to the above, to keep his name on the books of the University, by the annual payment of a fee of \$2 to the Registrar of the University. He may, if he prefer it, compound for the above annual fees, by the payment of \$6 in one sum for the Master's Degree, or \$30 for the Doctor's Degree, on or before the date of application for the Degree.

If the degree of M.A. be granted, with permission to the Candidate, on special grounds, to be absent from Convocation, the fee is \$25.

The M.A. or LL.D. fee must be sent with the thesis to the Secretary of the University. This is a condition essential to the reception of the application. The Secretary will then forward the thesis to the Dean of the Faculty.

*Extract from the Regulations of the Board of Governors for  
Election of Fellows under Chap. V. of the  
Statutes of the University.*

“From and after the graduation of 1888, all new Graduates shall  
“pay a Registration Fee of \$2.50 at the time of their graduation, in  
“addition to the Graduation Fee; and shall be entered in the  
“University list as privileged to vote, and shall have voting-papers  
“mailed to them by the Secretary.”

#### IV. SCHOLARSHIPS AND EXHIBITIONS.

##### General Regulations.

1. A Scholarship is tenable for *two* years; an Exhibition for *one* year.

**Scholar-  
ships.**

2. Scholarships are open for competition to Students who have passed the University Intermediate Examination, provided that not more than three sessions have elapsed since their Matriculation; and also to Candidates who have obtained what the Faculty may deem equivalent standing in some other University, provided that application be made before the end of the Session preceding the examination.

3. Scholarships are divided into two classes:—(1) **Science Scholarships**; (2) **Classical and Modern Language Scholarships**. The subjects of examination for each are as follows:—

**Science Scholarships.**—MATHEMATICS—Differential and Integral Calculus; Analytic Geometry; Plane and Spherical Trigonometry; Higher Algebra and Theory of Equations; NATURAL SCIENCE—Botany; Chemistry; Logic. (For subdivision, see below.)

**Classical and Modern Language Scholarships.**—Greek; Latin; English Composition; English Language and Literature; French or German.

**Exhibi-  
tions.**

4. Exhibitions are assigned to the First and Second Years.

First Year Exhibitions are open for competition to candidates for entrance into the First Year.

Second Year Exhibitions are open for competition to Students who have passed the First Year Sessional Examinations, provided that not more than two sessions

have elapsed since their Matriculation ; and also to candidates for entrance into the Second Year.

The subjects of examination are as follows :—

**First Year Exhibitions.**—CLASSICS, MATHEMATICS, ENGLISH.

**Second Year Exhibitions.**—CLASSICS, MATHEMATICS, ENGLISH LANGUAGE AND LITERATURE, CHEMISTRY AND FRENCH OR GERMAN.

5. The First and Second Year Exhibition Examinations will, for Candidates who have not previously entered the University, be regarded as Matriculation Examinations.

6. No student can hold more than one Exhibition or Scholarship at the same time.

7. Exhibitions and Scholarships will not necessarily be awarded to the candidates who have obtained the highest marks. An adequate standard of merit will be required.

8. If in any College Year there be not a sufficient number of candidates showing adequate merit, any one or more of the Exhibitions or Scholarships offered for competition may be given to more deserving candidates in another year.

9. A successful candidate must, in order to retain his Scholarship or Exhibition, proceed regularly with his College Course to the satisfaction of the Faculty.

10. The annual income of the Scholarships or Exhibitions will be paid in four instalments, viz. :—In October, December, February and April, about the 20th day of each month.

11. The Examinations will be held at the beginning of every Session.

There are at present seventeen Scholarships and Exhibitions :—

**The Jane Redpath Exhibition**, founded by Mrs. Redpath, of Terrace Bank, Montreal :—value, about \$90 yearly, open to both men and women.

**Ten McDonald Scholarships and Exhibitions**, founded by W. C. McDonald, Esq., Montreal :—value, \$125 each, yearly.

**The Charles Alexander Scholarship**, founded by Charles Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects :—value, \$120 yearly.

**The George Hague Exhibition**, given by George Hague, Esq., Montreal, for the encouragement of the study of Classics :—value, \$125 yearly.

**The Major H. Mills Scholarship**, founded by bequest of the late Major Hiram Mills :—value, \$100 yearly.

**The Barbara Scott Scholarship**, founded by the late Miss Barbara Scott, for the encouragement of the study of the Classical languages and literature :—value, \$100 to \$120 yearly.

**Two Donalda Exhibitions**, open to women in the Donalda Department :—value, \$100 and \$120 yearly.

## Exhibitions and Scholarships Offered for Competition at the Opening of the Session, Sept., 1896.

N.B.—THREE OF THE EXHIBITIONS ARE OPEN TO WOMEN (TWO OF THESE TO WOMEN ALONE, EITHER IN THE FIRST OR SECOND YEAR.)

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**To Students entering the First Year, two Exhibitions of \$125, one of \$120, one of \$100, and one of \$90.**

These Exhibitions are awarded in accordance with the results of the Higher Entrance Examination for the First Year, provided an adequate standard of merit has been reached.

For subjects of Examination see under p. 35.

**To Students entering the Second Year, two Exhibitions of \$125 one of \$100, and one of \$120. (See also N.B. above.)**

**Subjects of Examination.** **Greek.**—XENOPHON, Hellenics, I. and II.; DEMOSTHENES, Olynthiacs, I. and II.; EURIPIDES, Alcestis.

**Latin.**—VIRGIL, Georgics, Bk. I.; HORACE, Odes, Bk. I.; LIVY, Bk. XXII.

Greek and Latin Prose Composition, and Translation at Sight from the less difficult Latin and Greek authors.

A Paper on Grammar and History.

*Text-books.*—Myers' Ancient History, Abbott's Arnold's Greek Prose Composition, Latin Prose through English Idiom (Abbott).

**Mathematics.**—Euclid (six books); Algebra (HALL and KNIGHT'S Advanced); McDOWELL'S Exercises in Modern Geometry; Theory of Equations (in part); Trigonometry (first four chapters, GALBRAITH and HAUGHTON).

**English Literature.**—MASON'S Grammar. SHAKSPERE, *As You Like It*. Trench, *Study of Words*.

**Chemistry.**—ROSCOE, Lessons in Elementary Chemistry, as far as page 264.

**French.**—DAREY, Principes de Grammaire française; LAFONTAINE, les Fables, livres III and IV; MOLIERE, l'Avare. Colloquial exercises; Dictation.

*Or, instead of French :—*

**German.**—German Grammar (VANDERSMISSEN, Accidence and Syntax) and Composition; GRIMM, Kinder und Hausmärchen (Vandersmissen's edition); SCHILLER, Der Neffe als Onkel, Der Gang nach dem Eisenhammer. Translation from English into German.

FOR CHANGES IN SUBJECTS OF EXAMINATION FOR 1897, SEE P. 62.

No Candidate who has been placed in the Third Class in more than one subject can be awarded a Second Year Exhibition.



To Students entering the Third Year, two Scholarships of \$125, one of \$120, and one of \$110, tenable for two years.

One of these is offered in **Mathematics and Logic**, and one in **Natural Science and Logic** as follows:—

1. **Mathematics.**—Differential Calculus (WILLIAMSON, Chaps. 1, 2, 3, 4, 7, 9; Chap. 12, Arts. 168-183 inclusive; Chap. 17, Arts. 223-242 inclusive). Integral Calculus (WILLIAMSON, Chaps. 1, 2, 3, 4, 5; Chap. 7, Arts. 126-140 inclusive; Chap. 8, Arts. 150-156 inclusive; Chap. 9, Arts. 168-176 inclusive). Analytic Geometry (SALMON, Conic Sections, subjects of Chaps. 1-13 [omitting Chap. 8], with part of Chap. 14). LOCK, Higher Trigonometry; McLELLAND and PRESTON, Spherical Trigonometry, Part I. SALMON, Modern Higher Algebra (first four chapters). TODHUNTER or BURNSIDE and PANTON, Theory of Equations (selected course).

**Subjects of Examination.**

**Logic**, as in JEVONS' Elementary Lessons in Logic.

- 2 **Natural Science.**—BOTANY, as in GRAY'S Structural and Systematic Botany. Canadian Botany, including a practical acquaintance with the Spermaphytes, Pteridophytes and Bryophytes. CHEMISTRY, as in ROSCOE'S Lessons in Elementary Chemistry, LOGIC, as in JEVONS' Elementary Lessons on Logic.

Two Scholarships are offered in **Classics and Modern Languages**, as follows:

**Greek.**—PLATO, Apology and Crito; XENOPHON, Memorabilia, Book I.; THUCYDIDES, Book VI.

**Latin.**—HORACE, Epistles, Book I.; LIVY, Books XXI., XXII.; VIRGIL, Georgics, Book II.; SALLUSTI, Catiline; CICERO, Select Letters (Pritchard and Bernard, Clarendon Press Series).

**Subjects of Examination.**

Greek and Latin Prose Composition, and Translation at Sight.

**Ancient History.**—*Text-Books.*—SMITH, Student's Greece; MOMMSEN, Rome (abridged).

**English Language and Literature.**—SPALDING, English Literature (Chap. VI, Part III., to end of book); SHAKSPERE, Tempest; MILTON, Paradise Lost, Books I. and II.; TRENCH, Study of Words.

**English Composition.**—High marks will be given for this subject.

**French.**—RACINE, Britannicus; MOLIÈRE, Les Femmes Savantes. French Grammar. BONNEFON, Les Ecrivains célèbres de la France. Translation from English into French; Dictation.

*Or, instead of French:*

**German.**—SCHILLER—Egmont's Leben und Tod (Buchheim), die Kraniche des Ibycus, Das Lied von der Glocke, der Kampf mit dem Drachen; GOETHE.—Torquato Tasso. German Grammar and Composition; Translation from English into German; Dictation.

## Changes for Entrance, Exhibitions and Scholarships, Sept., 1897.

### First Year Entrance

**English.**—In September, 1897, and until further notice, English Literature will be added to the subjects mentioned on p. 34. The works selected for 1897 are SHAKSPERE'S *Richard II.*, ed. Deighton (Macmillan) and SCOTT'S *Lady of the Lake*, ed. Stuart (Macmillan).

**German.**—(For men). The Entrance Examination in German in 1897 will include the first eighty pages of JOYNES' German Reader (or equivalent amount) together with German Accidence and translation into German as in the First part of VANDERSMISSEN'S *German Grammar* (or equivalent amount).

### First Year Higher Entrance

**Greek.**—HOMER, *Iliad*, Bk. IV. or I.; XENOPHON, *Anabasis*, Bk. I.; HOMER, *Odyssey*, Bk. VII. or XI.

**Latin.**—VIRGIL, *Aen.*, Bk. I. or III.; CICERO, in *Catilinam*, I, II.; or, HORACE, *Odes*, Book I.; CAESAR, *Bell Gall.*, I. and II., or II. and III.

**English.**—In September, 1897, and until further notice, *English Literature* will become a subject of examination, in addition to the Grammar at present prescribed. The works to be read are those selected for the First Year Examination for Passing, with the addition of MILTON'S *L'Allegro* and other short poems, ed. Bell (Macmillan). **Composition.**—In and after September, 1897, the candidate will be required to write an essay on some subject connected with the literature prescribed. **History.**—In and after September, 1897, a paper bearing on the chief landmarks in European History will be set. Attention should be given to great movements of thought, and to the courses and results of important wars. LAVISSE'S *General View of the Political History of Europe* (Longmans) will serve to indicate the character of the knowledge required. **Grammar.**—The candidate will be expected to supplement Mason's Grammar by using MORRIS'S *Historical Outlines of English Accidence* (Macmillan), as a book of reference.

In determining the award of Exhibitions of higher value, the Supplementary Examination on one of Shakspeare's plays will be replaced, in Sept., 1897 and until further notice, by an examination on HENRY MORLEY'S *First Sketch of English Literature*, chaps. VII and VIII.

**French.**—*Grammar.*—Syntax, in addition to the grammar of the Entrance Course. Easy translation from French into English, and English into French.

### Second Year En- trance

**Greek.**—XENOPHON, *Hellenics*, I. and II.; DEMOSTHENES, *Olynthiacs*, I. and II.; EURIPIDES, *Alceste*.

**Latin.**—VIRGIL, *Georgics*, Bk. I.; HORACE, *Odes*, Bk. I.; LIVY, Bk. XXII.

In 1897, the subjects will include in **Greek** (Easy Selections from XENOPHON, (Phillpotts and Jerram, Clarendon Press) and **Latin**, LIVY, Bk. I. Passages will also be set for Translation at Sight.

**English.**—In Sept., 1897, and until further notice, the subjects will be the same as those prescribed for the First Year Higher Examination of the same year, exclusive of the selected portion of MORLEY'S First Sketch.

**English and Modern History.**—In Sept., 1897, and until further notice, an examination will be held on the following works: *Language*, TRENCH, Study of Words. *Literature*, SPENSER, Faerie Queene, Bk. I. ed. Percival (Macmillan); TENNYSON, Selections from Tennyson, ed. Rowe and Webb (Macmillan). *History*—CHURCH, The beginning of the Middle Ages (Epochs of Modern History, Longmans'). *English Composition*—The candidate will be required to write an essay on some subject connected with the literature or history prescribed.

**Second  
Year Exhibitions**

**German.**—For 1897, add GOETHE, Hermann and Dorothea, to the subjects given on p. 60.

**Third Year  
Scholarships**

**English and History.**—In September, 1897, and until further notice, an examination will be held on the following works: *Literature*—SHAKSPEARE, Tempest, ed. Deighton, Macmillan; MILTON, Paradise Lost, Bks I and II (Macmillan); LAMB, Essays of Elia, ed. Hallward and Hill (Macmillan). *History*, MYERS, Mediæval and Modern History (Ginn), Part I. *English Composition*.—The candidate will be required to write an essay on some subject connected with the literature or history prescribed.

**French.**—PAUL BOURGET, Un Saint. F. COPPÉE, La Grève des Forgerons. V. HUGO, Le Roi s'amuse. Dictation; Oral Examinations. TH. GAUTIER, Le Capitaine Fracasse. J. MACÉ, Histoire d'une Bouchée de Pain. Oral Examinations; Dictation.

**German.**—For 1897 substitute IMMEKMANN, der Oberhof (Wagner, Pitt Press); and GOETHE, Iphigenie, for GOETHE, Torquato Tasso.

## Exemption from Tuition fees under Presentation Scholarships, etc.

These exemptions will be granted in September, 1896, under the regulations specified in the Calendar of 1895-96, p. 26. In accordance with a recent resolution of the Board of Governors, they will not be granted in subsequent years.

## V. GENERAL INFORMATION FOR STUDENTS.

### Boarding Houses.

Board and rooms can be obtained at a cost of from \$15 to \$25 per month: Rooms only, from \$4 to \$10 per month: Board only, from \$12 to \$18 per month.

Students can obtain a list of Boarding Houses on application to the Secretary.

For notice of McGill Students' Club, see "University Societies."

# Special Course for Women

IN THE FACULTY OF ARTS.

DONALDA ENDOWMENT.

Professors and Lecturers (as on page 3). Lady Superintendent, MISS HELEN GAIRDNER.

The classes for women under this endowment are wholly separate, except those for Candidates for Honours (including most of the additional courses in the Third and Fourth Years). The examinations are identical with those for men. Women will have the same privileges with reference to Classing, Honours, Prizes and Medals as men.

Regulations for Examinations, Exemptions, Boarding-Houses, Attendance, Conduct, Library and Museum are the same as for men. Undergraduates wear the Academic Dress ; others do not.

In September, 1896, a Scholarship, value \$125 yearly (tenable for two years), will be offered for competition in Mathematics to Students of the Third Year. Another of the same value will be offered in September, 1897, also. The course is the same as for the Mathematical Scholarship open to men.

The **Jane Redpath Exhibition** is open for competition, at the beginning of the First or Second Year, to both men and women.

Two other Exhibitions (one of the value of \$100, with free tuition, the other \$120 without free tuition) are open for competition in the First or Second Year to Students of the Donalda Department only. For Subjects see pp. 35 and 60. Candidates for these Exhibitions are allowed, according to the general rule of the Donalda Department, to substitute an additional modern language for Greek in the examination. In this case while the regulation concerning one modern language will, for Entrance only, be as on pp. 35 and 37, the course in that which is to be substituted for Greek in the Exhibition Examination will be :—



For First Year:—

**French**:—Grammar.—DAREY, Principes de Grammaire française. LA FONTAINE, Fables. MOLIERE, Le Bourgeois Gentilhomme. SANDEAU, Mlle de la Seiglière. Translation from English into French.

or **German**:—German Grammar and Composition; THEODOR STORM, Immensee and VON HILLERN, Höher als die Kirche (both published by Heath & Co.). SCHILLER, Der Gang nach dem Eisenhammer, Das Lied von der Glocke; STIFTER, Haidedorf (Heath & Co.); Translation at Sight. Translation from English into German.

N.B.—In and after 1897, add GOETHE—Götz von Berlichingen.

For Second Year:—

**French**:—EUGÈNE VOIZARD, Essais de Montagne. LAMARTINE, Jeanne d'Arc. CORNEILLE, Cinna.

or **German**:—SCHILLER, Der Neffe als Onkel, Egmont's Leben und Tod, Der Geisterseher, Die Kraniche des Ibykus. Translation at Sight; German Grammar and Composition; Translation of French and English into German.

N.B.—In and after 1897, add GOETHE, Torquato Tasso.

One free tuition may be awarded to a Candidate who approaches very near to the winner of either of the Exhibitions.

*In accordance with a recent resolution of the Board of Governors, no free tuition will be granted after September, 1896.*

The income of the **Hannah Willard Lyman Memorial Fund** will be given in prizes.

## I. MATRICULATION AND ADMISSION.

**Greek**.—See p. 34.

**Latin**.—See p. 34.

Candidates who cannot pass in Greek may substitute an additional modern language, subject to the same regulations throughout the course of four years. In and after 1895, there will be an entrance examination in German for such candidates.

**Mathematics**.—See p. 34.

**English**.—See p. 34.

**French**.—See p. 35.

**German**.—JOYNES' German Reader, (or equivalent). German Grammar (First forty lessons of VANDERSMISSEN'S German Grammar, or equivalent).

For 1897, the whole of JOYNES' German Reader (or equivalent amount), the whole of VANDERSMISSEN'S German Grammar, Accidence and Syntax (or equivalent) including English-German exercises. The amount of grammar contained in SONNENSCHN'S German Grammar (Parallel Grammar Series) would be regarded as an equivalent, if supplemented by exercises in translation into German.

**Partial Students.**—Candidates unable to pass in all the above subjects may be admitted as Partial Students, to the separate classes; they may in the First Year under certain conditions make good their standing as Undergraduates at the Christmas or Sessional Examinations.

## II. ORDINARY COURSE OF STUDY FOR THE DEGREE OF B.A.

*(In separate Classes.)*

For all Subjects (except German) in all the Years, see p. 39.

The CHEMISTRY of the First year will be optional in 1896-97.

The first and second-year courses in **German** are as follows:—

1. THOMAS, German Grammar; FREYTAG, Die Journalisten; UHLAND, Ballads and Romances (Macmillan's Foreign School Classics). HEINE, Die Harzreise. Two hours a week.
2. THOMAS, German Grammar; LESSING, Minna von Barnhelm; SCHILLER, Belagerung von Antwerpen; GOETHE, Hermann and Dorothea. Two hours a week.

### Gymnastics.

A class will be conducted by Miss Barnjum, which will be optional and open to Partial Students.

### Elocution.

Instruction in this subject will be given to those who desire it, by Mr. J. P. Stephen. Special fee for session, \$3.

## Honour Courses and Additional Courses.

*(In Mixed Classes.)*

Undergraduates desiring to take one of the Honour Courses in CLASSICS, MATHEMATICS, MATHEMATICAL PHYSICS, MENTAL AND MORAL PHILOSOPHY, ENGLISH LANGUAGE AND LITERATURE, HISTORY, GEOLOGY and other NATURAL SCIENCES, MODERN LANGUAGES or such portions of the Honour Courses as constitute the Additional Courses, may in the Third and Fourth Years obtain exemptions to the same extent as men, and must take the lectures with men.

Details will be found on pp. 43-44.

### III. DEGREES.

Students are admissible to the degrees of B.A., M.A., and LL.D., conferred in the usual way, on the usual conditions; and will be entitled to all the privileges of these degrees, except that of being elected as Fellows.

### IV. FEES.

The fees which are the same as for men (see p. 56), are to be paid to the Registrar of the University, from whom tickets for the Library and copies of the Library Rules may be obtained.

*Exemptions from fees.* For regulations under which these may be granted in September, 1896, see last year's Calendar.

### V. LODGINGS, &c.

Women not resident in Montreal, proposing to attend classes, and desiring to have information as to suitable lodgings, are requested to intimate their wishes in this respect to the Registrar of the University, at least two weeks before the opening of the session. Students desiring information as to the above or other matters are referred to the Lady Superintendent, who will be found in her office in the rooms of the Donalda Department, every day during the session, except Saturday.

### Lectures Open to Partial Students, Session 1896-97.

**Botany** :—*Prof. Penhallow.*

**Zoology** :—*Dr. Deeks.*

**Geology** :—*Dr. Adams.*

**Experimental Physics** :—*Prof. Cox and Prof. Callender.*

**Psychology and Logic** :—*Rev. Dr. Murray and Mr. Lafleur.*

**Mental Philosophy** :—*Rev. Dr. Murray and Mr. Lafleur.*

**Moral Philosophy** :—*Rev. Dr. Murray.*

**Rhetoric** :—*Mr. Lafleur.*

**English** :—*Prof. Moyse.*

**History** :—*Dr. Colby.*

**Latin and Greek\*.** **French\*.** **German\*.** **Mathematics.\*** **Mathematical Physics\*.**

Those Courses in which two lectures weekly are delivered will each amount to about 45 lectures, and the others in proportion.

\* The lectures on these subjects extend over all the Years of the Course, and the hours will depend on the standing of Students with respect to previous preparation as ascertained by examination.

## FACULTY OF ARTS, 1895-6.

## \*ORDINARY LECTURES IN THE DONALDA SPECIAL COURSE FOR WOMEN.

| YEARS        | HOURS. | MONDAY.       | TUESDAY.             | WEDNESDAY.                  | THURSDAY.             | FRIDAY.       |
|--------------|--------|---------------|----------------------|-----------------------------|-----------------------|---------------|
| FIRST YEAR.  | 10     | Greek.        | † Mathematics.       | Greek.                      | † Mathematics.        |               |
|              | 11     | German.       | English.             | Latin.                      | English.              | Greek.        |
|              | 12     | Latin.        |                      | Mathematics.                |                       | Latin.        |
|              | 2      | Mathematics.  | French.              |                             | French.               | Mathematics.  |
|              | 3      |               |                      |                             | German.               |               |
| SECOND YEAR. | 9      |               |                      | Latin.                      |                       |               |
|              | 10     | Mathematics.  | † Math.              | French.                     | Greek.                | Latin.        |
|              | 11     | Botany.       | Math. Phys.          |                             | † Mathematics.        | German.       |
|              | 12     | Logic.        | Latin.               | Botany.                     |                       | † Mathematics |
|              | 2      | Greek.        |                      | Logic.                      |                       | Logic.        |
|              | 3      | German.       | Greek.               | Mod. History.               | French.               | Mod. History. |
| THIRD YEAR.  | 9      |               |                      |                             |                       |               |
|              | 10     | English.      | Greek, Exp. Physics. | Greek.                      | Greek, Exp. Physics.  | French.       |
|              | 11     | French.       | Rhetoric.            | Latin.                      | Math. Physics.        | Latin.        |
|              | 12     | Latin.        | Zoology.             |                             | Zoology.              | Math. Physics |
|              | 2      |               | Botany.              |                             | German.               | Botany        |
|              | 3      | Metaphysics.  |                      | Metaphysics.                |                       |               |
|              | 4      | German.       |                      |                             |                       |               |
| FOURTH YEAR. | 9      | Astronomy (a) |                      | German.                     |                       | Geology.      |
|              | 10     | French Greek. | Exp. Physics.        | Geology.                    | German, Exp. Physics. | French.       |
|              | 11     |               | Latin.               | English Lit. Astronomy (a). | Greek, Math. Physics. | Latin.        |
|              | 12     | Geology.      | Moral Phil.          | Moral Phil.                 | Moral Phil.           | Math. Phys.   |
|              | 2      |               | Botany.              |                             |                       | Botany.       |

(a) During First Term.  
For Candidates for Honours.



# Faculty of Applied Science.

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## FACULTY OF APPLIED SCIENCE.

WILLIAM PETERSON, M.A., LL.D., Principal.

HENRY T. BOVEY, M.A., D.C.L., LL.D., M.Inst. C.E., F.R.S.C., Dean of the Faculty.

## PROFESSORS.

B. J. HARRINGTON, M.A., Ph.D., F.R.S.C., Professor of Chemistry and Mineralogy.

HENRY T. BOVEY, M.A., D.C.L., Professor of Civil Engineering and Applied Mechanics.

C. H. MCLEOD, MA.E., F.R.S.C., M.Can.Soc.C.E., Professor of Surveying and Geodesy, Lecturer in Descriptive Geometry, and Superintendent of the Observatory.

G. H. CHANDLER, M.A., Professor of Applied Mathematics.

C. A. CARUS-WILSON, M.A., A.M.Inst.C.E., M.Inst.E.E., Professor of Electrical Engineering.

JOHN COX, M.A., Professor of Physics.

J. T. NICOLSON, B.Sc., M. Can.Soc.C.E., Professor of Mechanical Engineering, and Lecturer in Thermodynamics.

H. L. CALLENDAR, M.A., F.R.S., Professor of Physics.

S. H. CAPPER, M.A., Assoc. R.I.B.A., Professor of Architecture.

J. B. PORTER, Ph.D., Professor of Mining and Metallurgy.

## ASSISTANT PROFESSORS AND LECTURERS.

CECIL B. SMITH, MA.E., M.Can.Soc.C.E., Assistant Professor of Civil Engineering.

J. J. GUEST, B.A., Assistant Professor of Mechanical Engineering.

R. S. LEA, MA.E., Assoc. M.Can.Soc.C.E., Assistant Professor of Civil Engineering and Lecturer in Mathematics.

H. F. ARMSTRONG, Assistant Professor of Freehand Drawing.

H. W. UMNEY, A.M.I.C.E., Assistant Professor of Civil Engineering.

NEVIL NORTON EVANS, M.A.Sc., Lecturer in Chemistry.

J. G. G. KERRY, MA.E., Assoc. M.Can.Soc.C.E., Lecturer in Surveying.

## DEMONSTRATORS.

M. H. TORY, M.A., in Physics.

F. H. PITCHER, B.A.Sc., in Physics.

ALEXANDER BRODIE, B.A. Sc., in Practical Chemistry.

L. HERDT, B.A.Sc., E.E., in Electrical Engineering.

W. A. DUFF, B.A.Sc., in Mechanical Engineering.

H. T. BARNES, M.A.Sc. in Physics.

*With the foregoing are associated the following Professors and Lecturers of the Faculty of Arts.*

CHARLES E. MOYSE, B.A., Professor of English Language and Literature.  
 D. P. PENHALLOW, M.A.Sc., F.R.S.C., Professor of Botany.  
 FRANK D. ADAMS, M.A.Sc., Ph.D., F.G.S., Professor of Geology.  
 C. W. COLBY, B.A. Ph.D., Professor of History.  
 L. R. GREGOR, B.A., Lecturer in German.  
 M. INGRES, B.A., Lecturer in French Language and Literature.  
 W. E. DEEKS, B.A., M.D., Lecturer in Zoology.  
 REV. J. L. MORIN, M.A., Seasonal Lecturer in French Language and Literature.

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### § I. GENERAL STATEMENT.

The Instruction in this Faculty is designed to afford a complete preliminary training of a practical as well as theoretical nature, to Students who desire to pursue the profession of Architecture, or who are preparing to enter any of the various branches of the professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

Six distinct Departments of study are established, viz. —

(1)—Architecture. (2)—Civil Engineering and Surveying. (3)—Electrical Engineering. (4)—Mechanical Engineering. (5)—Mining Engineering. (6)—Practical Chemistry.

Each of these extends over four years, and is specially adapted to the prospective pursuits of the Student. The subjects of instruction in the several Departments are given in the Table on the following page.

The Degrees conferred on the University upon such undergraduates of the Faculty as shall fulfill the conditions and pass the Examinations hereinafter stated will be, in the first instance, "Bachelor of Applied Science," mention being made in the Diploma of the particular Department of study pursued; and, subsequently, the degree of "Master of Engineering" or "Master of Applied Science." (§ IV.)

## II. TABLE SHOWING THE SUBJECTS OF INSTRUCTION AND HOURS PER WEEK DEVOTED TO EACH SUBJECT.

|              | SUBJECTS.                         | DESCRIPTION UNDER | ARCHITECTURE. | CIVIL ENGINEERING. | ELECTRICAL ENGINEERING. | MECHANICAL ENGINEERING. | MINING ENGINEERING. | PRACTICAL CHEMISTRY. |
|--------------|-----------------------------------|-------------------|---------------|--------------------|-------------------------|-------------------------|---------------------|----------------------|
| FIRST YEAR.  | Chemistry.....                    | § XII., 9         | 2             | 2                  | 2                       | 2                       | 2                   | 2                    |
|              | Descriptive Geometry.....         | " 4               | 6(a), 3(b)    | 6(a), 3(b)         | 6(a), 3(b)              | 6(a), 3(b)              | 6(a), 3(b)          | 6(a), 3(b)           |
|              | English.....                      | " 16              | 2             | 2                  | 2                       | 2                       | 2                   | 2                    |
|              | French or German.....             | " 17              | 3             | 3                  | 3                       | 3                       | 3                   | 3                    |
|              | Mathematics.....                  | " 15              | 10            | 10                 | 10                      | 10                      | 10                  | 10                   |
|              | Mechanism.....                    | " 7               | 1             | 1                  | 1                       | 1                       | 1                   | 1                    |
|              | Freehand Drawing.....             | " 5               | 3             | 3                  | 3                       | 3                       | 3                   | 3                    |
|              | Chemical Laboratory.....          | § XIII., 3        | 3             | 3                  | 3                       | 3                       | 3                   | 3                    |
|              | Mathematical Laboratory.....      | " 1               | 3 (b)         | 3 (b)              | 3 (b)                   | 3 (b)                   | 3 (b)               | 3 (b)                |
|              | Shopwork.....                     | § XV., 7          | 7             | 7                  | 7                       | 7                       | 7                   | 7                    |
| SECOND YEAR. | Botany.....                       | § XII., 1         | —             | —                  | —                       | —                       | —                   | 2                    |
|              | Chemistry.....                    | " 4               | —             | —                  | —                       | —                       | 7                   | 14                   |
|              | Descriptive Geometry.....         | " 4               | 3             | 3                  | 3                       | 3                       | 3                   | —                    |
|              | French or German.....             | " 17              | 2             | 2                  | 2                       | 2                       | 2                   | 2                    |
|              | Kinematics of Machinery.....      | " 7               | —             | 1 (b)              | 1                       | —                       | —                   | —                    |
|              | Mathematics.....                  | " 15              | 6             | 6                  | 6                       | 6                       | 6                   | —                    |
|              | Physics.....                      | " 14              | 2             | 2                  | 2                       | 2                       | 2                   | 2                    |
|              | Surveying.....                    | " 3               | 3             | 3                  | —                       | —                       | 3                   | —                    |
|              | Zoology*.....                     | " 1               | 3             | —                  | —                       | —                       | 3                   | —                    |
|              | Drawing.....                      | " 7               | 6             | 3                  | 3                       | 3                       | 3                   | —                    |
|              | Physical Laboratory.....          | § XIII., 3        | 3             | 3                  | 3                       | 3                       | 3                   | 3                    |
|              | Shopwork.....                     | § XV., 6          | 6             | 6                  | 6                       | 6                       | 6                   | 6                    |
| THIRD YEAR.  | Architecture & Arch. History..... | § XII., 1         | —             | —                  | —                       | —                       | 6                   | 16                   |
|              | Chemistry.....                    | " 9               | —             | —                  | —                       | —                       | —                   | —                    |
|              | Decoration, Ornament, etc.....    | " 4               | 2             | 2                  | —                       | —                       | —                   | —                    |
|              | Descriptive Geometry.....         | " 4               | —             | —                  | —                       | —                       | —                   | —                    |
|              | Determinative Mineralogy.....     | " 11              | —             | —                  | —                       | —                       | 3                   | 3                    |
|              | Dynamics of Machinery.....        | " 17              | —             | 2                  | 2                       | —                       | —                   | —                    |
|              | Electrical Engineering.....       | " 6               | —             | —                  | 1                       | —                       | —                   | —                    |
|              | Geology and Mineralogy *.....     | " 11              | 3             | 3                  | —                       | —                       | 4 to 5              | 4 to 5               |
|              | Mathematics.....                  | " 15              | 3             | 3                  | 3                       | 3                       | 3                   | —                    |
|              | Machine Design and Exercises..... | " 17              | —             | 2                  | 5                       | —                       | —                   | —                    |
|              | Mining.....                       | " 14              | —             | —                  | —                       | —                       | 3                   | —                    |
|              | Physics.....                      | " 14              | 2             | 2                  | 2                       | 2                       | 2                   | 2                    |
|              | Railroad Engineering.....         | " 2               | 1             | —                  | —                       | —                       | Opt.                | —                    |
|              | Surveying.....                    | " 3               | 3             | 3                  | —                       | —                       | —                   | —                    |
|              | Theory of Structures.....         | " 1               | 3             | 3                  | 3                       | 3                       | 3                   | —                    |
|              | Zoology*.....                     | " 13              | —             | —                  | —                       | —                       | —                   | 3                    |
|              | Drawing and Designing.....        | " 9               | —             | 3                  | 3                       | 3                       | 3                   | —                    |
|              | Electrical Engineering Lab.....   | § XIII., 3        | 3 (c)         | 3 (c)              | 3 (c)                   | 3 (c)                   | 3 (c)               | —                    |
|              | Mathematical Laboratory.....      | " 1               | 3 (c)         | 3 (c)              | 3 (c)                   | 3 (c)                   | 3 (c)               | —                    |
|              | Physical Laboratory.....          | " 3               | 3             | 3                  | 3                       | 3                       | 3                   | 3                    |
|              | Testing Laboratory.....           | § XII., 7 (b)     | 7 (b)         | 7 (b)              | 4 (b)                   | 4 (b)                   | 4 (b)               | —                    |
|              | Shopwork.....                     | § XV., 6          | 6             | 6                  | 6                       | 6                       | 6                   | —                    |
| FOURTH YEAR. | Architecture & Arch. History..... | § XII., 1         | —             | —                  | —                       | —                       | 9                   | —                    |
|              | Assaying.....                     | " 9               | —             | —                  | —                       | —                       | —                   | 24                   |
|              | Chemistry.....                    | " 9               | —             | —                  | —                       | —                       | —                   | —                    |
|              | Decoration, Ornament, etc.....    | " 4               | —             | —                  | —                       | —                       | —                   | —                    |
|              | Dynamics of Machinery.....        | " 17              | —             | —                  | 1(a), 2(b)              | 1(a), 2(b)              | —                   | —                    |
|              | Electrodynamics.....              | " 2               | —             | —                  | —                       | —                       | —                   | —                    |
|              | Electrical Engineering.....       | " 6               | —             | —                  | 1                       | 1(b) opt.               | —                   | —                    |
|              | Geodesy.....                      | " 3               | 2             | —                  | —                       | —                       | —                   | —                    |
|              | Geology and Mineralogy *.....     | " 11              | —             | —                  | —                       | —                       | 3                   | 3                    |
|              | Heating and Sanitation.....       | " 2               | —             | —                  | —                       | —                       | —                   | —                    |
|              | Hydraulics.....                   | " 2               | 2             | 2                  | 2                       | 2                       | 2                   | —                    |
|              | Machine Design.....               | " 17              | —             | —                  | 1                       | 1                       | —                   | —                    |
|              | Municipal Engineering.....        | " 2               | 1             | —                  | —                       | —                       | 1                   | —                    |
|              | Metallurgy.....                   | " 8               | —             | —                  | —                       | —                       | 2                   | 2                    |
|              | Railroad Engineering.....         | " 2               | 1             | —                  | —                       | —                       | Opt.                | —                    |
|              | Theory of Structures.....         | " 2               | 4             | 4                  | —                       | —                       | —                   | —                    |
|              | Thermodynamics.....               | " 10              | 2             | 2                  | 2                       | 2                       | 2                   | —                    |
|              | Drawing and Designing.....        | " 3               | 3             | 3                  | 3                       | 3                       | 3                   | —                    |
|              | Electrical Engineering Lab.....   | § XIII., 6        | —             | —                  | 12                      | 9                       | —                   | —                    |
|              | Geodetic Laboratory.....          | § XIII., 7        | 3             | —                  | —                       | —                       | —                   | —                    |
|              | Hydraulic Laboratory.....         | " 8               | 3             | 3                  | 3                       | 3                       | 3                   | —                    |
|              | Mechanical Laboratory.....        | " 9               | —             | —                  | —                       | 6                       | —                   | —                    |
|              | Museum Work.....                  | § XIV., 6         | —             | —                  | —                       | —                       | 6                   | —                    |
|              | Physical Laboratory.....          | § XIII., 3        | Opt.          | 6                  | Opt.                    | Opt.                    | Opt.                | Opt.                 |
|              | Testing Laboratory.....           | " 4               | 6             | 6                  | —                       | 1                       | 3                   | —                    |
|              | Thermodynamic Laboratory.....     | " 5               | —             | —                  | —                       | 7                       | —                   | —                    |
|              | Shopwork.....                     | § XV., 4          | 4             | 3                  | 4                       | 4                       | —                   | —                    |

(a) First term. (b) Second Term. (c) First half of First Term. (d) Second half of First Term.  
\* Besides work in the Museum.



### § III. MATRICULATION AND ADMISSION.

All Students are recommended to take the First and Second Years of the Arts Course. They are then admitted into the Faculty of Applied Science without examination. (See § IV. iv.)

Students and Graduates in Arts will be admitted to such standing in the Faculty of Applied Science as their previous studies will warrant, but are recommended to take the drawing and\*shop work during their Arts Course.

Candidates for examination must present themselves on the first day of examination, and all Students must attend punctually at 9 a.m. on Monday, September 21st, when the lectures will begin.

Examinations for entrance will be held in 1896 (1) on June 1st and following days, in McGill College and at local centres, and (2) on Wednesday, September 16th, and following days, in McGill College only.

Any Head Master or other person desiring a local examination in June must, before May 10th, submit the name of some suitable person, preferably a University graduate, who is willing to act as Deputy Examiner, *i.e.*, receive the questions, hold the examinations, and forward the answers to Montreal. Further particulars relating to this examination will be given on application to the Secretary of the University.

### SUBJECTS OF EXAMINATION.

**MATHEMATICS.**—*Arithmetic*—All the ordinary rules, including square root and a knowledge of the Metric System.

*Algebra*—Elementary rules, involution, evolution, fractions, indices, surds, simple and quadratic equations of one or more unknown quantities.

*Geometry*—Euclid, Bks. I, II., III., IV. and VI., with definitions of Bk. V., and easy deductions.

*Trigonometry*—As in Hamblin Smith, pp. 1-100, omitting Ch. XI.

**ENGLISH**—*Dictation.* *Grammar* including analysis. The leading events of English History.

After entrance, one modern language, *viz.*, FRENCH OR GERMAN, must be studied. In the former subject an entrance examination

will be held at the same time as the other examinations, embracing :—

Easy Translation and Grammar to the beginning of Syntax.

In 1896 and 1897, the German may be taken without previous examination, but in June and September, 1898, and subsequently, an examination will be required in :—

Joynes' German Reader—the first eighty pages (or equivalent) ; German accidence and translation into German as in the first part of Van der Smissen's Grammar (or equivalent).

Candidates who, in addition to the ordinary matriculation examination in English, pass an examination in the advanced portions of the English Language and Composition, may, on the recommendation of the examiner, be exempted from this subject in this Faculty.

Candidates who pass a satisfactory examination in French or German may, on the recommendation of the examiner, be exempted from such subject in this Faculty.

Candidates who pass an examination at entrance in Freehand Drawing, equivalent to the First Year examination, may, on the recommendation of the examiner, be exempted from this subject in the First Year.

Candidates who produce certificates of having already completed a portion of a course in some recognized School of Applied Science may be admitted to an equivalent standing.

PARTIAL STUDENTS.—Students may be allowed to take one or more courses of instruction, upon showing, by examination or otherwise, that they are qualified to do so.

#### § IV. EXAMINATIONS.

##### I. FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

##### 1. FACULTY EXAMINATIONS.

There will be a Christmas examination for Students of the First Year in all the subjects, and for Students of the other years in such subjects as shall be determined by the Faculty. A sessional examination in all the subjects will be held at the end of the First and Second Years.

## 2. UNIVERSITY EXAMINATIONS.

(a) There will be a primary examination at the end of the Third Year in all the subjects of that year. Candidates must pass this Examination before entering the Final Year.

(b) There will be a final examination for the degree of Bachelor of Applied Science at the end of the Fourth Year, in all the subjects of that Year.

Successful Students will be arranged in order of merit.

## II. FOR THE DEGREE OF MASTER OF ENGINEERING.

Candidates must be Bachelors of Applied Science of at least three years standing, and must produce satisfactory certificates of having been engaged during that time upon *bona fide* work in either the Civil, Electrical, Mechanical, or Mining Branch of Engineering.

They must pass with credit an examination extending over the general theory and practice of Engineering, in which papers will be set having special reference to that particular branch upon which they have been engaged during the three preceding years.

Candidates must present applications for examinations, together with the necessary certificates and fees. The Faculty will notify the candidates whether their certificates are satisfactory, and also of the date of the examination. (See also § V.)

## III. FOR THE DEGREE OF MASTER OF APPLIED SCIENCE.

Candidates must be Bachelors of Applied Science of at least three years standing, must present certificates of having been employed during that time in some branch of scientific work, and must pass with credit an examination on the theory and practice of those branches of scientific work in which they may have been engaged. The other conditions as under the last heading. (See also § V.)

## IV. SPECIAL PROVISIONS FOR OBTAINING THE TWO DEGREES OF BACHELOR OF ARTS AND BACHELOR OF APPLIED SCIENCE IN SIX YEARS.

The Regulations heretofore in force have been modified so as to enable Students to take the two degrees of B.A. and B.A.Sc. in six years, as follows :—

1. Students who have passed the Intermediate in Arts may enter the First Year of the Applied Science Course, and will be exempted from the modern languages which they have already taken in Arts.

2. The remaining subjects required for the B.A. degree may be spread over three years instead of two.

3. The Faculty of Arts will accept the Mathematical Physics of the Applied Science Course in lieu of the Mathematical Physics of the Arts Course.

4. The Faculty of Arts will accept the Laboratory Work in Physics in lieu of the Natural Science of the Arts Course.

A certificate of Licentiate in Arts will be given along with the professional degree in Applied Science to those who, previous to entrance upon their professional studies proper, have completed two years in the Faculty of Arts, and have duly passed the prescribed examinations therein, but who do not wish to proceed to the degree of B.A.

## § V. GRADUATE COURSES.

Students who take the Bachelor's degree in one of the courses provided by the Faculty of Applied Science may graduate in any of the remaining courses by attending one or more subsequent sessions.

Graduates may also take an advanced course in the branch in which they have received their degree. On passing an examination at the end of such advanced course, the Master's degree will be conferred without further examination, as soon as satisfactory certificates of having been employed for two years in practical work have been received.

Students are strongly recommended to take a Graduate Course, and special arrangements will be made for advanced and research work in the following:—

In Chemistry and Mineralogy. (See § XII., 9 and 11. and XIII., 2.)

In the determination and comparison of the errors and the coefficients of standards of length. (See § XII., 3, and § XIII., 7.)

In the determination of gravity.

The elasticity and strength of materials. (See § XII., 2, and § XIII., 4.)



The efficiency of pumps and hydraulic motors. (See § XII., 2, and § XIII., 8.)

The efficiency of power transmission by air, water, gas, steam and electricity. (See § XII., 2, 6, 7.)

The efficiency of steam, gas, oil and hot-air engines (simple and compound) and of refrigerators. (See § XII., 7 and 10.)

The efficiency of machines and machine tools, and the power absorbed by the several processes of mechanical work. (See § XII., 7.)

The efficiency of dynamometers, belting and shafting, including investigations into the relative merits of the several ungents. (See § XII., 7.)

The efficiency of the several types of boilers, including investigations on the heat-producing power of the several fuels. (See § XII., 10.)

On the efficiency of dynamos and electric motors.

The flow of water through orifices and pipes, and over weirs. (See § XII., 2, and § XIII., 9.)

In Geodesy and Practical Astronomy.

In street railway design and theory, and in alternating apparatus.

In Physics.—The McDonald Physics Building has been equipped and arranged with special reference to Graduate Courses and original research work in various branches of pure Physics. Every facility will be afforded in the workshop for the construction of special apparatus required for such investigations. (See § XIII., 3.)

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## § VI. ATTENDANCE AND CONDUCT.

1. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a session shall in each case be determined by the Faculty. The Professor may, at his discretion, refuse credit for attendance, on the ground of lateness, inattention or disorderly conduct.

2. Any student who does not report his residence on or before November 1st in each year is liable to a fine of one dollar. All subsequent changes of address must be immediately reported to the Dean.

3. Every Student is required to deposit with the Secretary of the University the sum of \$5.00 as caution money for damage done to the furniture, machinery or other apparatus. In the case of improper or disorderly conduct in the University buildings or grounds, the Faculty may impose such penalty as may be deemed advisable, and may also inflict fines, to be deducted, if the Faculty thinks fit, from the caution money.

If individual responsibility for damage cannot be traced, a *pro rata* assessment will be made over all of the Students more directly concerned.

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## § VII. LIBRARY.

Librarian :—C. H. GOULD, B.A

Assistant Librarian :—H. MOTT.

1. During the College Session the University Library is open daily (except on Sundays and general public holidays), from 9 a.m. till 5 p.m. ; and the Reading Rooms from 9 a.m. till 6 p.m., and also from 8 till 10 p.m. On Saturdays, both Library and Reading Rooms close at 5 p.m. During vacations, both Library and Reading Rooms close at 5 p.m., and on Saturdays at 1 p.m.

2. Students in the Faculty of Applied Science, who have paid the Library fee, may borrow books on depositing the sum of \$5 with the Bursar, which deposit, after the deduction of any fines due, will be repaid at the end of the session on the certificate of the Librarian that the books have been returned uninjured.

3. Graduates in any of the Faculties, on making a deposit of \$5, are entitled to the use of the Library, subject to the same rules and conditions as Students ; but they are not required to pay the annual Library fee.

4. No borrower other than a Professor or Lecturer may keep any book belonging to the Library longer than two weeks, on penalty of a fine of 5cts a volume for each day of detention, but any borrower may renew the loan of a book for fitting reasons. A borrower incurring fines beyond the sum total of \$1 shall be debarred from the use of the Library until they have been paid.

5. Before leaving the Library, readers must return the books they have obtained, to the attendant at the Delivery Desk.

All persons using books remain responsible for them, so long as the books are charged to them, and borrowers returning books must see that their receipt for them is properly cancelled. Damage to, or loss of books shall be made good to the satisfaction of the Librarian and of the Library Committee. Writing or making any mark upon any book belonging to the Library is unconditionally forbidden. Any persons found guilty of wilfully damaging any book in any way shall be excluded from the Library, and shall be debarred from the use thereof for such time as the Library Committee may determine.

6. Silence must be strictly observed in the Library.

### § VIII. PETER REDPATH MUSEUM.

1. The Museum will open every lawful day from 9 a.m. till 5 p.m., except when closed for any special reason by order of the Principal or Committee.
2. Students will obtain tickets of admission from the Principal on application.
3. Students will enter by the front door only, except when going to lecture.
4. Any students wilfully defacing or injuring specimens, or removing the same will be excluded from access to the Museum for the session.

### § IX. FEES.

The fees for students matriculated in the Faculty during or previous to Session 1894-95 are \$102.00.

After the present date, the total fees for Undergraduates entering the First and subsequent years will be \$150.00, which includes the fees for Tuition, Library, Matriculation, Graduation, Laboratories, Workshops, Gymnasium, Grounds, etc.

The Matriculation fee of \$5.00 (included in the \$150.00 fee) must be paid to the University Secretary previous to the examination.

Deposit for caution money (see § VI.), \$5.00.

Partial Students will be admitted to the Professional Classes in any year on payment of the ordinary fees for that year; or they may attend the lectures on any subject on payment of a special fee. The fee for each subject taken in the Arts Faculty is \$4.00 per session. In all other subjects, the fee, unless otherwise specified, is \$12.50 for each term, or \$25.00 for the whole session.

**SPECIAL LABORATORY FEES.**—Partial Students desirous of taking Courses in any of the several Laboratories will be required to pay a fee of \$25.00 for each Course.

**SPECIAL WORKSHOP FEES.**—Partial Students desirous of taking the workshop courses will be required to pay the following fees, which include cost of materials and use of all tools:

1 day, or 7 hours per week for the whole Session from

|               |   |                     |         |
|---------------|---|---------------------|---------|
|               |   | September to April: | \$25 00 |
| 2 days, or 14 | " | "                   | 45 00   |
| 3 days, or 21 | " | "                   | 60 00   |
| 4 days, or 28 | " | "                   | 70 00   |

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|                                                                             |      |
|-----------------------------------------------------------------------------|------|
| Supplemental Examination, at date fixed by Faculty                          | 2 00 |
| "                    "                    if for any special reason granted |      |
| at any other date than that fixed by the Faculty                            | 5 00 |
| Fee for a certificate of standing,                                          | 2 00 |
| Fee for registration at time of graduation,                                 | 2 50 |

The fees must be paid to the Secretary, and the tickets shown to the Dean, within fourteen days after the commencement of attendance in each Session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty, and on payment of a fine of \$2.

The fee for a Graduate Course is \$150.00. Graduates of this Faculty will be required to pay only one-half of this amount.

Fee for the Degree of MASTER OF ENGINEERING or MASTER OF APPLIED SCIENCE, \$10.00.

If for any special reason the Degree of M.A.E., or M.A.Sc., be granted *in absentia*, the fee will be \$25.00.

### § X. MEDALS, EXHIBITIONS, PRIZES AND HONOURS.

1. THE BRITISH ASSOCIATION GOLD MEDAL AND EXHIBITION, founded by the British Association for the Advancement of Science, in commemoration of the meeting held in Montreal in the year 1884.

The British Association Gold Medal for the Session 1896-97, <sup>1901</sup> its equivalent, will be awarded in the Graduating Class.

2. THE GOVERNOR GENERAL'S SILVER MEDAL (the gift of his Excellency The Right Honourable the Earl of Aberdeen).

The Medal will be awarded in the Graduating Class. The conditions will be specified at the opening of the Session.

3. SUMMER WORK. The following prizes are offered for the best summer Theses :—

To the students of the Civil Engineering Course a prize of \$25 presented by P. A. Peterson, M.Inst.C.E.

To the students of the Electrical Engineering Course a prize of \$25 presented by E. B. Greenshields, Esq., B.A.

To the students of the Mechanical Engineering Course a prize of \$25 presented by W. Laurie, Esq., M.E., M.Can.Soc.C.E.

To the students of the Mining Engineering Course a prize of \$25 by the Canadian Mining Review.

The following Exhibitions and Prizes will be open for competition at the beginning of the Session. *Students are required to notify the Dean of their intention to compete, at least one week before the commencement of the examination.*

4. A British Association Exhibition of \$50.00 and a prize of \$25.00 presented by H. Paton, Esq., to Students entering the Fourth Year, the subjects of examination being the Mathematics and Theory of Structures of the Ordinary Course.



5. A SCOTT EXHIBITION of \$60.00, founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, and a prize of \$25.00 presented by H. Paton, Esq., to Students entering the Third Year, the subjects of Examination being:—

(a) An Essay, in the form of a character sketch, on Bacon, or Sir Isaac Newton, or Darwin. On the day of the Examination, the candidates will be required to write an essay on one of these characters. Three hours will be allowed for this. (b) Mathematics of the Second Year Course. (c) French or German of the Second Year Course.

6. Three Prizes of \$50.00, \$30.00 and \$20.00, presented by D. Ogilvy, Esq., B.A.Sc., will be open for competition to Students entering the Second Year, the subjects of Examination being the Mathematics, Descriptive Geometry and Freehand Drawing of the First Year course.

7. The Mason prize of \$50.00 in Electrical Engineering, given by Dr. A. F. Mason for original investigation in the practical application of Electricity.

8. Two Prizes, each of \$10.00, presented by W. Kennedy, Esq. Jr., M.Can.Soc.C.E., to Students entering the Third Year, for proficiency in Levelling or Transit Work.

9. Two prizes, one of \$10.00 and one of \$5.00, presented by A. T. Taylor, Esq., F.R.I.B.A., will be awarded to the two undergraduates taking the highest standing in the Freehand Drawing of the First Year.

10. Prizes or certificates of merit are given to such Students as take the highest place in the Sessional and Degree Examinations.

11. HONOURS.—On graduation, Honours will be awarded for advanced work in Professional subjects.

12. By the will of the late Dr. T. Sterry Hunt, F.R.S., an endowment has been provided for Scholarships in Practical Chemistry, which it is hoped will be available before the close of next session

13. SCIENCE SCHOLARSHIPS GRANTED BY HER MAJESTY'S COMMISSION FOR THE EXHIBITION OF 1851.—These Scholarships of £150 sterling a year in value are tenable for two or, in rare instances, three years. They are limited, according to the Report of the Commission, "to those branches of Science (such as Physics, Mechanics and Chemistry) the extension of which is specially im-

portant for our national industries." Their object is, not to facilitate ordinary collegiate studies, but "to enable Students to continue the prosecution of Science with the view of aiding in its advance or in its application to the industries of the country."

A nomination to one of these scholarships for the year 1895 was placed by the Commission at the disposal of McGill University, and another may be granted in 1897.

It is open to Students of not less than three years' standing in the Faculties of Arts or Applied Science, and is tenable at any University or at any other Institution approved by the Commission.

This Exhibition has been awarded as follows :—

Evans, P., 1891.      Macphail, J. A., 1893.      King, R. O., 1895.

14. WORKSHOP PRIZES.—A prize of \$20.00, presented by C. J. Fleet, B.A., B.C.L., for bench and lathe work in the woodworking department, open to Students of not more than two terms standing in workshop practice.

## § XI. SPECIAL PROVISIONS.

1. Partial Students may be admitted to the professional classes upon payment of special fees. (§ IX)

2. Students in Applied Science may, by permission of the Faculty, take the Honour Classes in the Faculty of Arts.

3. Undergraduates in Arts of the Second and Third Years, or Graduates of any University, entering the Faculty of Applied Science, may, at the discretion of the Professors, be exempted from such lectures in that Faculty as they have previously attended as Students in Arts.

4. Students who have failed in a subject in the Christmas or Sessional Examinations may regain their standing by passing a supplemental examination at a time appointed by the Faculty. Unless such supplemental examination is passed, Students will not be allowed to proceed to any subsequent examination in the subject. A second supplemental examination will not be granted unless under exceptional circumstances, to be investigated in each case by the Faculty.

5. Students may be required to answer satisfactorily a weekly paper on such subjects of the course as the Faculty may determine.

6. Credit will be given in the Sessional Examinations for work done during the session in certain of the subjects which will be specified at the commencement of the first term.

7. Students who fail to obtain their Session, and who in consequence repeat a Year, will not be exempted from examination in any of those subjects in which they may have previously passed, except by the express permission of the Faculty. Application for such exemption must be made at the commencement of the Session.

8. SUMMER WORK.—During the summer vacation following the close of each year all students entering the Third and Fourth Years are required to prepare a thesis on a subject specified by the Faculty. Any student may substitute for the specified subject, a report on some practical work in course of construction. The marks given for these theses will be added to the results of the sessional examinations. The theses must be handed in to the Dean on or before the 21st September.

9. Certificates may be given to Students who have passed through any of the special courses attached to the curriculum.

10. The headquarters of the Canadian Society of Civil Engineers are located in Montreal. The Society holds fortnightly meetings, at which papers upon practical current engineering subjects are read and discussed. Undergraduates joining the Society as Students may take part in these meetings, and acquire knowledge of the utmost importance in relation to the practical part of the profession.

11. Caps and gowns, also the overalls for the workshops, may be obtained from the janitor of the Engineering Building.

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## §XII. COURSES OF LECTURES.

### I. ARCHITECTURE.\*

Professor of Architecture :—To be appointed

Lecturers :—To be appointed

The lectures upon the elements of Architecture will treat of the forms and proportions of the various orders. The lectures will be accompanied by instruction in the making of plans, elevations, sketches and details, the examples chosen being such as will make the student familiar with ordinary architectural forms. This preliminary work will be followed by the preparation of working drawings

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\*Further details of this course will be given at the opening of the Session.

and by the study of the materials and processes employed in building operations.

In conjunction with the work in Chemistry, the subjects of ventilation and heating, the drainage of buildings, the disposal of refuse, etc., will also be dealt with.

Architectural Engineering will also engage the special attention of the student and will embrace mathematics, surveying, theory of structures, and the strength of materials, supplemented by a practical course in the laboratories.

In the historical courses the great eras of European civilization will be studied with a view to putting types of architecture in touch with the culture which produced them. The rise and perfection of new constructive features will be chiefly dealt with, though attention will also be paid to ornament. After dealing briefly with Egyptian and Assyrian art, the lecturer will trace in detail the historical progress of architecture from the Heroic Age to the reign of Queen Anne. Photographs and lantern slides will be used in illustration. The two following courses will be given in alternate years :—

1. Greek, Etruscan, Roman, Early Christian and Byzantine Architecture. Two lectures a week.

2. Romanesque, Gothic, and Renaissance Architecture. Two lectures a week

## 2. CIVIL ENGINEERING AND APPLIED MECHANICS.

Professor :—HENRY T. BOVEY M. INST. C. E. (Scott Professor of Civil Engineering and Applied Mechanics).

Assistant Professors :  $\left\{ \begin{array}{l} \text{C. B. SMITH, MA.E.} \\ \text{R. S. LEA, MA.E.} \\ \text{..... To be appointed.} \end{array} \right.$

### THEORY OF STRUCTURES.

The lectures on this subject embrace :—

(a) The analytical and graphical determination of the stresses in the several members of framed structures, both simple and complex, as, *e.g.*, cranes, roof and bridge trusses, piers, etc.

(b) The methods of ascertaining and representing the shearing forces and bending moments to which the members of a structure are subjected.

(c) A study of the strength, stiffness and resistance of materials, including a statement of the principles relating to work, inertia, energy and entropy, together with a discussion of the nature and effect of the different kinds of stress and the resistance offered by a material to deformation and to blows.

(d) The design and proper proportioning of beams, pillars, shafts, roofs, bridge piers and trusses, arches, arched ribs, masonry dams, foundations, earth works and retaining walls.

TEXT-BOOK.—Bovey's Theory of Structures and Strength of Materials.

The Laboratory Work (see also § XIII.) is as follows :—

*Fourth Year.*—During the Fourth Year, students are expected to engage in a research upon the physical properties of a material of construction, with special reference to the form and position of such material in the structure.



*Third Year.*—During the Third Year the Laboratory work will include the following :—

(a) *The testing of Timber.*—Transverse Tests on Hard and Soft Timber. Compressive Tests on specimens of various lengths cut out of the same timbers. Bearing Tests on specimens from same timbers. Tensile Tests on specimens from same timbers. Shearing Tests on specimens from same timbers.

(b) *The testing of Iron and Steel.*—Tensile Tests of Wrought Iron and Mild Steel. Tensile Tests of Cast Steel and Cast Iron. Compressive Tests of ditto. Transverse Tests of ditto.

(c) *The testing of Brick and Stone.*

(d) *The testing of Concrete and Cement.*

#### *Graduate Course.*

Special arrangements are made for advanced and research work on the nature, elasticity and strength of the several materials of construction.

#### HYDRAULICS. (For Laboratory Work, see § XIII.)

The lectures deal with this subject both theoretically and with reference to its practical application.

The Student is instructed in the fundamental laws governing the equilibrium of fluids, and in the laws of flow through orifices, mouth-pieces, submerged (partially or wholly) openings, over weirs, through pipes in open channels and rivers. The impulsive action of a free jet of water upon vanes, both straight and curved, is carefully discussed, and is followed by an investigation of the power and efficiency of the several hydraulic motors, as, *e.g.*, Reaction Wheels, Pressure Engines, Vertical Water Wheels, Turbines, Pumps, etc.

TEXT-BOOK.—Bovey's *Hydraulics*.

The laboratory work (see also § XIII.) will include the following :—

(a) *Flow through orifices.*—The determination of the coefficients of discharge, velocity, etc.

(b) *Flow over weirs.*—The determination of the coefficient of discharge with and without side contraction. Also the measurement of the section of the stream.

(c) *Flow through pipes.*—The determination of the effect upon the flow, of angles, bends and sudden changes of section.

(d) *Impact.*—The determination of the coefficient of impact.

(e) *Motors, etc.*—The determination of the efficiency of Pelton and other wheels, of vortex and other turbines, of centrifugal and other pumps, etc.

*Graduate Course.*

Special arrangements are made for advanced and research work on the flow of water through orifices, over weirs, and on the efficiency of pumps and hydraulic motors.

## RAILROAD ENGINEERING.

The lectures on this subject will embrace :

- (a) *Location*.—Traffic, gradients, curvature, train resistance, general location of line by comparisons of routes.
- (b) *Construction*.—Determination of structures required in construction with descriptions of types of same. Laying out of work ; calculation of quantities of material used in construction. Specifications.
- (c) *Permanent Way*.—Track-laying, ties (wooden and metal), ballast, steel rails and fastenings, semaphores, switches, yards, turn-outs, frogs, etc., methods of signalling (telegraphic, staff, block, permissive block, etc.) Operation and equipment, with special reference to couplers and brakes ; maintenance of way, renewals, surfacing, etc. Résumé of railroad law, having special reference to the duties of an Engineer.

These lectures, while giving the best practice of the present day, will only enter into detail sufficiently to illustrate the principles underlying the location, construction and maintenance of railroads.

## MUNICIPAL ENGINEERING.

The lectures on this subject will embrace :—

(a) *Water Supply*.—The quantity and quality of water ; systems and sources of supply ; rainfall and evaporation ; storage as related to the supplying capacity of water-sheds ; natural and artificial purification ; distribution, including the location of mains, hydrants, stop-valves, etc., for combined or separate fire and domestic systems ; details of construction, including dams, reservoirs, pumps, etc., preliminary surveys, estimates of cost, statistics, etc.

(b) *Sewerage of Cities and Towns*.—The various systems for the removal of sewage ; speedy methods in use for its treatment and ultimate disposal ; the proportioning and construction of main branch and intercepting sewers ; manholes, flush-tanks, catch-basins, etc. ; materials used in construction ; estimate of cost.

(c) *Roads, Streets, Pavements*.—Methods and costs of construction and maintenance, drainage, etc., of country roads ; earth, macadam, telford, etc., comparisons of value to community by their effect on hauling capacities of teams. Pavements and sidewalks ; objects of, foundations for, and materials employed (stone, wood, brick, asphalt, etc.) considered as to first cost, and cost and methods of renewal ; effect on health of inhabitants, relative tractive and wearing qualities, methods and cost of cleaning, etc., etc.

The lectures are designed to give the student a grasp of the principles involved rather than too great a detailed mass of facts, which vary year by year in minor points.

### 3. SURVEYING AND GEODESY.

Professor :—C. H. MCLEOD, M.A.E.

Lecturer :—J. G. G. KERRY, M.A.E.

This course is designed to give the student a full theoretical and practical training in the methods of land and Geodetic Surveying, in the field work of engineering operations and in Practical Astronomy. The course is divided as follows :—

SECOND YEAR.—Chain and angular surveying : the construction, adjustment, use and limitation of the various instruments. Underground surveying. Topography, levelling, contour surveying.

THIRD YEAR.—Construction surveying, including the location of roads, simple and transition curves, setting out work and calculation of quantities. Geodetic, trigonometric and barometric levelling. Descriptions for deeds. General land systems of the Dominion and Provinces. Topographic and photographic surveying. Hydrographic surveying. Introduction to Practical Astronomy.

In the field the students of the Second and Third Years are required to carry out the following :—(1) A chain survey. (2) A chain and compass survey. (3) A pacing survey. (4) A contour survey. (5) A plane-table survey. (6) A survey and location of a line of road with determination of topography and contours and subsequent staking out for construction. (7) A hydrographic survey of a channel in the St. Lawrence River.

All students are required to keep complete field notes, and from them to prepare maps, sections and estimates of the work.

The large drawing rooms are furnished with fixed mountings for the various instruments, in order to permit of their use and investigation during the winter months.

FOURTH YEAR.—Practical Astronomy :—the determination of time, latitude, longitude and azimuth. Geodesy :—figure of the earth ; measurements of base-lines and triangulation systems ; adjustments and reductions of observations.

The field work of the 4th year consists in the measurement of a base-line, triangulations and precision levelling.

The practical work in Astronomy (for equipment of observatory see § XIII, Art. 7) comprises : (1) Comparisons of clocks and chronometers. (2) Determination of meridian by solar attachment. (3) Meridian, latitude and time by solar and stellar observations with the Engineer's transit. (4) Latitude and time by sextant. (5) Time by astronomical transit. (6) Latitude by zenith telescope. (7) Latitude by transit in prime vertical.

Exercises in the Geodetic laboratory (for equipment see § XIII, Art. 7) carried out in this year include the following :—(1) Measurement of magnifying power. (2) Determination of vernier errors. (3) Errors of graduation. (4) Measurement of eccentricity of circles. (5) Determination of errors of run of theodolite microscopes. (6) Investigation of the errors of a standard bar. (7) Graduating scales with the dividing engine, and comparison thereof on the comparator. (8) Investi-

gation of the errors of circles on the circular comparator. (9) Determination of the constants of steel tapes. (10) Investigation of the graduation errors of steel tapes on the fifty-foot comparator. (11) Investigation of the errors of aneroid barometers. (12) Investigation of the errors of level tubes, and determination of their scale values. (13) Measurement of the force of gravity with a reversible pendulum. (14) Measurements of magnetic dip, declination and horizontal force.

The equipment of the surveying department comprises the following, in addition to the apparatus of the Observatory and Geodetic Laboratory :—Six transit theodolites by various makers, solar attachment and mining telescopes. Five dumpy and two wye levels. Four sextant and artificial horizons. Two plane-tables. Three surveyors' compasses. Three prismatic compasses. Three current meters. 300 and 500 ft. steel tapes arranged for base measurement. An 8 in. altazimuth. A Kern precision level, rods, &c. Two heliotropes, several barometers, pantograph, station pointers, hand levels, steel bands, chains, tapes, pedometers, rods, and other minor instruments.

Examinations for Land Surveyors :—Any graduate in the Faculty of Applied Science in the Department of Civil Engineering and Land Surveying may have his term of apprenticeship shortened to one year for the profession of Land Surveyor in Quebec or Ontario, or for the profession of Dominion Land Surveyor.

TEXT-BOOKS :—Gillespie's Surveying, Johnson's Theory and Practice of Surveying, Shortland's Nautical Surveying, Green's Practical and Spherical Astronomy, Nautical Almanac, Baker's Engineers' Surveying Instruments.

#### *Graduate Course.*

Special arrangements are made for advanced and research work in Geodesy and Practical Astronomy. See § V.

### 4. DESCRIPTIVE GEOMETRY.

Lecturers :— { C. H. McLEOD, M.A.E.  
 { ..... To be appointed.

FIRST YEAR.—Geometrical drawing, orthographic projections, including penetrations, developments, sections, etc. Isometric projection.

SECOND YEAR.—Problems on straight line and plane. Projections of plane and solid figures. Curved surfaces and tangent planes. Intersections of curved surfaces. Axometric projections. Shades and shadows. Mathematical perspective and the perspective of shades and shadows.

THIRD YEAR.—Graphical determination of spherical triangles. Spherical projections. Construction of maps.

TEXT-BOOK.—Millar's Descriptive Geometry.

### 5. FREEHAND AND ENGINEERING DRAWING.

Lecturers :—To be appointed.

This course is designed to give Students facility in observation and in sketching objects, both from the flat and from the round. Special instruction is given in sketching parts of machinery, structural work, etc.



## 6. ELECTRICAL ENGINEERING.

Professor:—C. A. CARUS-WILSON, M.Inst.E.E. (McDonald Professor of Electrical Engineering).

Demonstrator:—L. HERDT, B.A.Sc., E.E.

The object of this course is to introduce the Student to the principles underlying the practice of Electrical Engineering. But little time is devoted to the consideration of strictly technical detail, which the Student can far better study in the factory, where he is strongly recommended to go after his college course. The methods and the instruments used are, in almost every case, those that the Student will have eventually to use in practice. The object of the lectures is not to go over ground already covered by the textbooks, except in cases where the subjects are not clearly put, but rather to direct the reading of the Students and to discuss problems arising out of the Laboratory work.

The work in the Electrical Engineering laboratories is not commenced until the second term of the Third Year. By that time the Students will have gained a fair general acquaintance with Electricity in the Physical Laboratory. They will then begin a series of experiments on Electricity and Magnetism on a practical scale, using methods and instruments in ordinary practical use, still, however, confining their attention to the principles and not to their application. This term's work is preparatory to that of the Fourth Year, when the Students will, in the Dynamo Room, study the practical application of these principles.

Here they will make experiments on electrical machinery of all kinds: series, shunt, and compound dynamos; motors, motor-generators, alternators, etc. They will be able to carry out tests of dynamos, transformers and motors under practical working conditions, not only on the apparatus in the dynamo room but also throughout the building, where there are several motors driving lathes, fans, etc., besides an electric elevator and an electric drill. In addition to these advantages they will have the opportunity of seeing a typical lighting station of twelve hundred lights at work, and may become familiar with the best practice and design of engines, dynamos, switchboard, wiring, etc.

*Graduate Course.*

A special course in Electrical Engineering will be arranged for the session 1896-97.

This course will be open to graduates in Mechanical Engineering, or others who can show by examination or certificate that they are sufficiently qualified.

The course will comprise:—

A series of lectures on Electro-Dynamics.

Work in the Electrical Engineering Laboratories, consisting of tests of generators, motors, etc.

A course of dynamo design.

## 7. MECHANICAL ENGINEERING.

Professor :—J. T. NICOLSON, B.Sc., M.CAN.SOC.C.E. (Workman Professor of Mechanical Engineering).

Assistant Professor :—J. J. GUEST, B.A.

Demonstrator :—W. ARCH. DUFF, B.A.Sc.

This course embraces four subjects of study, as follows :—

### I. DESCRIPTIVE MECHANISM AND KINEMATICS OF MACHINERY.

A course of lectures, illustrated by the lantern, will be given in the First Year, introducing the subject of mechanism in general to the Student. Beginning with elementary contrivances and common forms, the functions and principles of all kinds of ordinary mechanisms are explained ; and the course concludes with detailed descriptions of prime movers, machine tools, locomotives, and other machinery.

In the Second Year the science of Kinematics applied to machinery is taken up. Reuleaux's principles and classifications are followed, and illustrated by the fine and unique collection of models in the Museum. The synopsis of the course includes the following subjects : Definition of a machine. Lower Pairs. Kinematic chains and trains. Centrodes. Restraint. Higher Pairs. Force and chain closure. Dead points. Notation Analysis of the quadric crank chain, the slider-crank chain, the double-slider crank chain. Chamber crank and wheel trains. Kinematic synthesis.

### II. DYNAMICS OF MACHINERY.

While motion without regard to force was considered in the kinematic course, the action of external forces so as to compel rest or prevent change of motion, or so as to produce or to change motion in the links of mechanisms, is now considered in a series of lectures extending over two years.

The Third Year course embraces the following :

Friction. Laws based on recent experiments, applied to journals and pivots. Railway brakes. Resistance to rolling. Friction in mechanisms treated graphically. Dynamics of belt and rope drives. Friction clutches. Elementary parts of dynamics of the steam engine, curves of crank effort for single and multiple cranks. Fluctuation of energy and of speed. Fly-wheels. Indicators. Absorption and transmission dynamometers.

FOURTH YEAR :—Balancing of double and single acting engines and of the locomotive. Rigid dynamics applied to the connecting rod, the oscillating engine, the governor, and gyrostatic action in machinery. The inter-relation between fly-wheel and governor. Dynamics of machine tools, of pumping and of forging machines. Graphic treatment of the dynamics of complicated machines. Knocking of steam engines.

### III. MACHINE DESIGN.

In the above courses the parts of the machines considered have been supposed perfectly rigid ; their real state in this respect is considered in two courses of

lectures extending over the Third and Fourth Years. The nature of the instruction is sufficiently indicated in the Text-book, which is Unwin's Machine Design, 2 vols.

#### IV. MECHANICAL DRAWING.

This course extends over three years :—

SECOND YEAR :—Elementary principles of mechanical drawing. Simple machine details. Sketching of machinery. Dimensioning. Tracing and conventional colouring.

THIRD YEAR :—Making of working drawings. Simple designing. Engine designing.

FOURTH YEAR :—Practical machine design. The complete design of a machine, such as a steam engine, a pump, a crane, a turbine, a machine tool, or an air pump and condenser.

N.B.—During Session 1896-97 it is proposed to deliver, in connection with the Mechanical Department, courses of lectures on the transmission of power by means of wire ropes, compressed air, and coal gas. Also on the theory and action of cutting tools.

##### *Graduate Course.*

A graduate course in Mechanical Engineering has now been arranged for, and will consist of part or all of the following work :

Experimental researches on steam engines and boilers, hot air and gas engines, compressed air plant for power transmission, refrigerating machines ; on superheated steam, cylinder condensation, and feed heating ; and on the value of fuels.

Experiments on the relative value and properties of lubricants, on transmission and absorption dynamometers, on the efficiency of transmission machinery, and of machine tools.

Researches on the tempering and welding of various materials ; and on the properties of alloys.

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#### 8. MINING AND METALLURGY.

Professor :— . . . . . To be appointed.

##### I. MINING.

In the Third Year, a course of lectures is given in Mining, among the subjects taken up being :—Prospecting, Exploratory Mining, Hydraulic Mining, Underground Work, Exploitation of Ore Deposits, Transport of Ores underground and at the surface, Shafts, Tunnels and Inclines or Slopes, Timbering, Pumps and Drainage, Ventilation, Hoisting Plants, Explosives and Blasting, Use of Compressed Air and Electricity in Mining, Mine Accounts, and Ore Dressing, with special reference to Canadian ores.

##### II. METALLURGY.

During the Fourth Year a course of lectures is given on modern Metallurgical methods, special attention being given to Canadian ores, *e.g.*, gold, silver, lead, copper and nickel, with descriptions of Canadian iron and steel plants.

These lectures are illustrated by blue-prints of the latest designs and details in Mill Work, Furnaces, etc. Each student receives copies of these blue prints to incorporate in his lecture notes.

*Draughting and Designing* and the plotting of mine maps from underground surveys receive special attention.

The *McGill University Mining Society* meets fortnightly, to hear and discuss technical papers by men eminent in the profession and by the Mining Students.

Arrangements are made for excursions to such places as the large copper mines at Capelton, Que. ; also to asbestos mines, slate quarries, etc.

LABORATORIES.—Very great facilities, not equalled elsewhere in Canada, are afforded the Mining Students in the engineering laboratories and workshops. In the Testing Laboratories (§XIII. 4) most important instruction and experience can be obtained as to the nature and strength of the several materials of construction and in the use of the various testing machines ; while in the Hydraulic Laboratory the instructions and experiments are of great practical importance to the Mining Engineer, who is constantly called upon to apply hydraulic principles in the execution of his various works.

In the Chemical Laboratories (§XIII. 2) and Assay-rooms, all the work done by the student is in direct relation to the needs of his future professional duties, and the Museum (§XIV.), with its large and complete collections, presents him with every opportunity for the study of Geology, Petrography, Palaeontology and Mineralogy, supplementing the lectures given by the Professors in these subjects. The lectures are designed to meet the special requirements of the Mining students.

## 9. CHEMISTRY AND ASSAYING.

Professor :—B. J. HARRINGTON, PH.D. (Greenshields Professor of Chemistry and Mineralogy).

Lecturer :—NEVIL NORTON EVANS, M.A.Sc.

Demonstrator :—ALEXANDER BRODIE, B.A.Sc.

This course includes lectures and laboratory work. In the First Year, Students of all the Departments attend a course of lectures on the laws of Chemical Combination, Chemical Formulæ and Equations, the preparation and properties of the more important Elements and their Compounds, etc. They also devote one afternoon a week throughout the session to practical work in the Laboratory where they learn the construction and use of ordinary apparatus, perform a series of experiments designed to cultivate the powers of observation and deduction, and begin Qualitative Analysis.

In the Second and Third Years, Students in the Department of Practical Chemistry attend lectures on the Chemistry of the metals or on Organic Chemistry, and receive instruction in Qualitative and Quantitative Analysis, including gra-



vimetric and volumetric methods and the application of electrolytic methods to the estimation of copper, nickel, etc. Blowpipe Analysis and Determinative Mineralogy also constitute part of the work of the Third Year.

In the Fourth Year, special attention is devoted to such subjects as Mineral Analysis and Assaying, and the Analysis of Iron and Steel; but considerable latitude is allowed to Students in the choice of subjects, and Organic work may be taken up if desired.

Students of the Mining Course take Qualitative and Quantitative Analysis during the Second and Third Years, and devote considerable attention in the Fourth Year to Mineral Analysis and Assaying of various ores, fuels, etc. They also attend the class in Blowpipe Analysis and Determinative Mineralogy in the Third Year.

The Chemical Laboratories (see § XIII) are open daily (Saturdays excepted) from 9 a.m. to 5 p.m.

## 10. THERMODYNAMICS.

Lecturer :—J. T. NICOLSON, B.Sc., M. CAN.SOC.C.E.

Demonstrator :—W. A. DUFF, B.A.SC.

Fundamental laws and equations of thermodynamics. Application to perfect gases and to steam saturated and superheated. Efficiency of perfect heat engines. Efficiency of actual air, gas, petroleum, and steam engines.

A study of the steam engine, including wire drawing, cylinder condensation and jacketing, and the most efficient and most economical point of cut-off. Sizes and proportions of cylinders in single, double and triple expansion engines to develop a given power. Expected indicator diagrams. Sizes and proportions of the principal types of steam generators. Comparison of practical suitability of steam and caloric engines. Theory of engine and boiler testing.

TEXT-BOOK.—Ewing's Steam Engine.

Peabody's Tables of Properties Steam.

## 11. GEOLOGY AND MINERALOGY.

Professors :— { B. J. HARRINGTON, PH.D.  
                  { FRANK D. ADAMS, PH.D.

SECOND YEAR.—A preliminary course in Zoology, with special reference to Fossil Animals.

THIRD YEAR.—Mineralogy (Ordinary and Honour). Petrography, Physical and Chronological Geology and Palaeontology, Geology of Canada, Methods of Geological Exploration.

FOURTH YEAR.—Special studies in Mineralogy and Petrography; Advanced Course in General Geology and Palaeontology; Geology of Canada; Practical Geology and Field-work.

For further details see Announcement of the Faculty of Arts.

NOTE.—Students of the Mining and Chemistry courses take the Honour Mineralogy of the Third Year in Arts. Mining Students take the whole Honour Course of the Fourth Year. Chemistry Students take, in addition to the ordinary Course in Geology, the Honour Mineralogy of the Fourth Year.

## 12. ZOOLOGY.

Lecturer :—W. E. DEEKS, B.A., M.D.

This Course includes Elementary Physiology, Embryology, Morphology and Classification of Animals, with a general account of their habits, distribution and geological history. The lectures are supplemented by weekly demonstrations in the Redpath Museum.

## 13. BOTANY.

Professor :—D. P. PENHALLOW, M.A.Sc.

General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of Plants. Elements of Histology.

## 14. EXPERIMENTAL PHYSICS.

Professors :—{ JOHN COX, M.A. (McDonald Professor of Physics).  
                   { HUGH L. CALLENDAR, F.R.S. (McDonald Professor of Physics).

The instruction includes a fully illustrated course of Experimental Lectures on the general Principles of Physics (embracing, in the Second Year—*The Laws of Energy—Heat and Light*; in the Third Year—*Sound—Electricity and Magnetism*), accompanied by courses of practical work in the Laboratory in which the Students will perform for themselves experiments, chiefly quantitative, illustrating the subjects treated in the lectures. Opportunity will be given to acquire experience with all the principal instruments used in exact physical and practical measurements. Students of Electrical Engineering will continue their work in the Laboratory in the Fourth Year, when they will undertake, under the guidance of the Professors, advanced measurements and special investigations bearing on their technical studies.

FOURTH YEAR ELECTRICAL STUDENTS.—Students of Electrical Engineering will continue their work in the Physical Laboratory in the Fourth Year. The following is a brief outline of the Course :

Magnetic elements and measurements. Use of Variometers. Testing magnetic qualities of iron.

Theory and practice of absolute electrical measurements.

Comparison and use of electrical standards, of resistance, E.M.F., self-induction, and capacity.

Principles of construction of electrical instruments.

Testing and calibration of ammeters, voltmeters, and wattmeters.

Insulation and capacity tests. Electrometers and Ballistic methods.

Construction and treatment of storage cells. Testing for capacity and rate of discharge.

Electric light photometry.

An additional course on telegraph and telephone work is under consideration.

### *Graduate Courses.*

The following are some of the sections in which special provisions have been made for advanced physical work :

*Heat.*—Thermometry. Comparison and verification of delicate thermometers. Air thermometry. Measurement of high temperatures. Electrical resistance thermometers and pyrometers. Thermo-electric pyrometers. Absolute expansion of mercury.

Calorimetry. Mechanical Equivalent of Heat. Variation of specific heat with temperature. Latent heat of fusion and vaporisation. Heat of solution and combustion. Electrical methods.

Radiation and conduction of heat with special methods and apparatus. Dynamical theory of gases.

Viscosity. Surface Tension. Variation of properties with temperature.

*Light.*—Photometric standards. Spectrophotometry. Theory of colour vision. Spectroscopy and spectrum photography. Compound prism spectrometers. Six inch and 2½ inch Rowland Gratings. Study of spectra of gases. Fluorescence and anomalous dispersion. Polarimetry. Landolt and other polar-meters. Form of wave surface.

*Sound.*—Velocity in gases and various media. Absolute determinations of period. Harmonic analysis of sounds. Effects of resonance and interference.

*Electricity and Magnetism.*—Magnetic properties. Influence of stress and torsion. Influence of temperature. Effects of hysteresis. Magneto-optics. Other effects of Magnetisation. Diamagnetism.

Electrical standards and absolute measurements. Calibration of electrical instruments.

Insulation and capacity testing. Electrometer and Ballastic methods. Temperature variation of resistance and E.M.F. Thermo-electric effects. Electrolysis. Chemistry of primary and secondary batteries. Resistance of Electrolytes, Polarisation.

Electric discharge in gases and high vacua. Dielectric strength. Behaviour of insulators under electric stress. Specific inductive capacity. Electric oscillations. Electro-magnetic optics. Alternating currents of high frequency and voltage.

## 15. MATHEMATICS AND MATHEMATICAL PHYSICS.

Professor :—G. H. CHANDLER, M.A.

Lecturer :—R. S. LEA, MA.E.

The work in this department is conducted from the outset with special reference to the needs of Students of Applied Science. Much time is given to practice in the use of Mathematical Tables, particular attention being paid to the solution of triangles, the tracing of curves, graphical representation of functions, reduction of observations, etc. Areas, volumes, masses, centres of gravity, moments of inertia, etc., are determined both by calculation and by observation or experiment, and each method is made to supplement or illustrate the other. In this connection, use will be made, in actual laboratory practice, of a large amount of apparatus, such as balances, Atwood's Machines, inclined planes, chronographs, rotation apparatus of various kinds, etc. The different methods of approximation, the reduction of results of experiments and observations by least squares, etc., will also receive due attention.

The lectures will embrace the following subjects :—

FIRST YEAR.—Euclid, to the end of Book VI., with exercises on Loci, Transversals, etc., Algebra, including the Binomial Theorem. Elements of Solid Geometry and of Geometrical Conic Sections. Plane and Spherical Trigonometry. Elementary Kinematics and Dynamics.

SECOND YEAR.—Analytic Geometry. Differential and Integral Calculus. Dynamics of Solids and Fluids.

THIRD YEAR.—Continuation of Analytic Geometry, Calculus and Dynamics.

Classes may also be held for advanced (optional) work in these or other subjects.

*Text-Books* (Partial list).—Todhunter's or Mackay's Euclid, Hall & Knight's Elementary Algebra. Wilson's Solid Geometry and Conic Sections, Wentworth's Analytic Geometry, Chandler's Calculus, Blakie's Dynamics, Wright's Mechanics, Bottomley's Mathematical Tables, Chambers' Mathematical Tables.

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## 16. ENGLISH LANGUAGE AND LITERATURE.

Professor :—C. E. MOYSE, B.A. (Molson Professor of English Language and Literature).

Lecturer :—C. W. COLBY, PH.D.

FIRST YEAR.—English Language and Literature.

SECOND YEAR.—A special course on English Composition.



## 17. FRENCH AND GERMAN.

*French Language and Literature.*

Lecturer :—M. INGRES, B.A.

Sessional Lecturer :—REV. J. L. MORIN, M.A.

*First Year.*—Vocabulary; object lessons; oral reproductions in French of stories told in French, and chosen from writers of the XIX. century; families of words; literature; elements of French prosody; sketches of and selections from writers of the XIX. century (the selections to be committed to memory); ten books by writers of the XIX. century to be read at home by the students, and reported on and discussed in the class; grammar; lexicology and syntax: dictation: special notions: geography of France; soil; climate; Paris; principal cities of France; domestic life in France, etc. Written composition, one a week.

Prescribed book :—Dictionnaire Larousse (Paris edition).

*Second Year.*—Vocabulary; object lessons: oral reproduction in French of stories told in French and chosen from writers of the XVII. and XVIII. centuries; formation of words, prefixes, suffixes, homonyms, etc.; literature; rhetoric; sketches of and selections from writers of the XVII. and XVIII. centuries (the selections to be committed to memory); ten books by writers of the XVII. and XVIII. centuries to be read at home by the students, and reported on and discussed in the class; grammar; lexicology and syntax, advanced course; dictation; special notions; French industries; public works in France; educational systems; military system; politics; theatres; the Press, etc., etc. Written composition, one a week.

Prescribed book :—Dictionnaire Larousse (Paris edition).

*German Language and Literature.*

Lecturer :—L. R. GREGOR, B.A.

*First Year.*—Van der Smissen and Fraser's German Grammar; Joynes' German Reader; Dictation; Colloquial exercises.

*Second Year.*—Van der Smissen and Fraser's German Grammar; Joynes' German Reader; Freytag, Die Journalisten; Uhland, Ballads and Romances (Macmillan's Foreign School Classics); Parsing; Dictation Colloquial exercises.

## 18. METEOROLOGY.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of the Senior Students.

Certificates will be granted to those Students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

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### § XIII. LABORATORIES.

In the Laboratories the Student will be instructed in the art of conducting experiments, a sound knowledge of which is daily becoming of increasing importance in professional work.

1. LABORATORY OF MATHEMATICS AND DYNAMICS.—The equipment of this Laboratory includes instruments for the measurement of distance (scales, micrometers, cathetometer), of area (planimeters), of volume (flasks, graduated vessels, etc.), of time (clocks, chronographs), of mass (beam and spring balances). It is also provided with a mechanical integrator, specific gravity balances, Atwood and Morin machines for experiments on the Laws of Motion, inclined planes, a variety of rotation apparatus (gyroscope, Maxwell's dynamical top, torsion balance, pendulums, etc.), air-pumps, thermometers, barometers, etc.

The Mathematical Laboratory is used chiefly in connection with the course in Dynamics. Lectures are given on the fundamental and derived units of the Science, as well as on the Laws of Motion, and deductions from the same. When the students have in this way been made acquainted with some of the ideas of the subject, they are admitted to the laboratory, where experiments of a progressive character are assigned to them. These experiments are in all cases quantitative, and embrace the measurement of mass by means of accurate physical balances, of intervals of time by clock and chronograph, and of distance by means of scales, crew micrometers, etc. They then proceed to the measurements of areas, volumes, velocities, accelerations, forces, specific gravities, friction, and also to pendulum experiments, etc. The equipment of the laboratory for this work is very complete, embracing as it does the ordinary instruments for the purpose to be found in most physical laboratories, together with a variety of apparatus specially constructed for this laboratory. Particular attention is given in the lectures to the principles of observing, in general, the sources of error, etc.; the whole course having reference to the subsequent work of the student in the Physical and Engineering Laboratories.

2. CHEMICAL LABORATORIES.—The Chemical Laboratories are three in number,—one for Students of the First Year; one for Students of the Second and Third Years, in which it has been found necessary to carry on both qualitative and quantitative work; and

one which is reserved for Students of the Fourth Year, and for special students who may wish to carry on original investigations. There is also a special room in the basement which is fitted up for fire assaying.

The Laboratories are supplied with five balances by Becker & Sons, one Bunge and an assay balance by Troemner. There are also a Laurent polariscope, a spectroscope by Dubosque, gas combustion and melting furnaces, apparatus for electrolytic work, etc., etc. Distilled water is obtained by means of a special boiler placed in the basement, which also supplies the steam for drying-ovens, steam baths and drying-chamber in the upper Laboratories.

The new Chemical Laboratory, the erection of which is announced on page 59, will render it possible to greatly extend the scope of the chemical work. While it is desirable that much attention should still be devoted to the important department of mineralogical chemistry, it is hoped that every provision will be made for study and research work in Organic and Physical Chemistry.

3. PHYSICAL LABORATORY.—The McDonald Physical Laboratory contains five storeys, each of 8,000 square feet area. Besides a lecture theatre and its apparatus rooms, the Building includes an elementary laboratory nearly 60 feet square; large special laboratories arranged for higher work by advanced students in Heat and Electricity, a range of rooms for optical work and photography; separate rooms for private thesis work by Students; and two large laboratories arranged for research, provided with solid piers and the usual standard instruments. There are also a lecture room with apparatus room attached, for Mathematical Physics, a special physical library, and convenient workshops. The equipment is on a corresponding scale, and comprises: (1) apparatus for illustrating lectures; (2) simple forms of the principal instruments for use by the Students in practical work; (3) the most recent types of all the important instruments for exact measurement, to be used in connection with special work and research.

The work of the year has been mainly devoted to completing the equipment of the Laboratory, and starting the practical work on a systematic basis. Additional cases, tables and other fittings have been obtained, tools and machines for the workshop, mercury stills, vacuum pumps, and other apparatus required in Experimental Physics.

Of the advanced practical work, the greater part hitherto, owing to the arrangement of the Electrical Engineering course, has been confined to Electricity and Magnetism. It may be of some interest, therefore, to give a brief abstract of the work of the last year in this direction, together with a description of the principal electrical standards and instruments of precision in the McDonald collection.

*Resistance Standards.*—There are thirty standard resistance coils of various patterns, including the B.A., the Board of Trade and the German, with a few others, ranging in value from 1,000 ohms to one ten-thousandth, and adapted for various different purposes. These have been tested and compared, and their values are found to agree as closely as could be expected with the Cambridge certificates, and those of the Reichsanstalt and the makers. The temperature coefficients of a few have also been determined. The comparisons have been made chiefly with Nalder's pattern of the Carey-Foster Bridge.

There is also a duplicate of the Fleming Bridge used at Cambridge, recently presented by the Duke of Devonshire.

*Resistance Boxes.*—The collection of resistance boxes includes almost all the best types. There is a Thomson-Varley slide-box by Nalder, which has proved extremely useful and accurate. This box has been accurately calibrated throughout. The largest discrepancy between two sets of observations on different dates and at different temperatures is one part in 50,000. The mean divergence is less than 1 in 100,000. The department thus possesses an instrument which can be used for calibrating other boxes with great ease and accuracy. Among the other boxes we may mention: two megohm boxes and four 100,000 ohm boxes of different patterns; a four dial and a six dial P.O. box; and a bar-dial box of Professor Anthony's pattern; also a compensated resistance box with mercury contacts, reading from 0 to 50 ohms continuously by the Carey-Foster method; this is extremely useful for the accurate determination of resistances which cannot be made up of any simple combination of standards, and has been accurately calibrated throughout.

For the comparison and determination of small resistances, there is a Kelvin conductivity bridge and a Lorenz apparatus, with the improvements made by Prof. V. Jones, which is now being completed under his supervision.

*Potential Standards.*—As potential standards, there are a number of Clark cells of Dr. Muirhead's pattern with attached thermometers, and a dozen of Professor Carhart's with his certificate. These have been frequently tested at various dates by different methods, and are found to agree with each other to about one-tenth of one per cent. The students have also set up a number of cells in accordance with the Board of Trade directions. The agreement of these is considerably closer, and though not of a portable form, they are more convenient for labora-



tory work. There have been used for testing and calibrating various types of commercial instruments.

*Current Standards.*—There is a Kelvin composite balance, which can also be used as a voltmeter, and wattmeter, and two Siemens dynamometers. The constants of these have been determined by the voltametric method, and found to be accurate to one-half of one per cent. They have been used for calibrating common types of alternate current instruments. We have also a set of 4 large storage cells with convenient commutators and resistances for furnishing large steady currents for the testing of ammeters and low resistances, and for other purposes. This equipment is similar to that in use at the Board of Trade in England and in the laboratories of some leading instrument makers.

As an absolute current standard there is a duplicate of the Weber electro-dynamometer made by Latimer Clark for the Committee of the British Association, the coils of which were wound by Clerk Maxwell, and used by Lord Rayleigh in his standard experiments. This instrument has been very carefully set up by R. O. King. It has been thoroughly tested and measured, and its constants determined.

*Insulation and Capacity Tests.*—For these and other tests is there a suitable collection of delicate reflecting galvanometers of the astatic, ballistic, differential and D'Arsonval types. The most delicate of these has a resistance of 110,000 ohms, and a figure of merit of upwards of 60,000 megohms with a 20 second swing.

There are eight quadrant electrometers of different types, the chief of which have been set up and used for various insulation and other tests. We have also one Kelvin absolute electrometer, and smaller portable electrometers and gauges on the same principle.

As a standard of capacity there is a cylindrical air condenser of the B.A. pattern. This was measured, cleaned, and set up by H. M. Tory in November, 1893.

Its capacity has not yet been determined absolutely. By comparison with our certificated mica standards, it was found to be nearly one-two hundredth of a microfarad, the value intended by the maker.

The mica standards and subdivided boxes have been carefully compared with each other and tested for insulation and absorption. They are above the average in quality and accuracy.

For the purpose of studying the behaviour of insulators under the influence of long continued and intense electric stress, a subject which is now becoming of importance in connection with the transmission of power at very high voltage, there is in preparation a transformer capable of working up to 100,000 volts and of sufficient power to give useful practical results.

*Magnetic Tests.*—Determinations of the dip and horizontal intensity have been made with the Kew instruments in different parts of the laboratory, and of the horizontal intensity with two other types of magnetometer. The values obtained showed a very satisfactory agreement, and were in all cases verified by

the local and bifilar variometers. A preliminary magnetic survey with the portable variometers has been made of all the laboratories in which experiments affected by the horizontal intensity are carried on. The results have been of great utility, and show that the precautions taken in erecting parts of the building with copper pipes and heating apparatus were by no means unnecessary, and might even have been extended with advantage to the elementary laboratories. It was also found that the disposition of the motors and machinery at the other end of the building was such as to produce a magnetic disturbance scarcely appreciable for most purposes in the portions devoted to delicate work.

Apparatus of various types for testing the magnetic quality of iron and steel has also been provided. These experiments are mainly carried on in the Engineering Building, but some tests have been made by the magnetometric method for which the Physics Building is more suitable.

Considerable progress has been made with the equipment for advanced work in Optics, Acoustics and Heat, but little work has as yet been done by the students in these branches, owing to the arrangement of the present courses of study. The collection of apparatus is on a corresponding scale to the electrical equipment, and includes several fine and valuable instruments. Among the more interesting pieces recently added or shortly to arrive, we may mention; a set of Ewing Seismographs; a Kieffler standard clock; a set of direct-reading electrical thermometers reading to  $.01^{\circ}$  Fahr., which are now being used for determining soil temperatures; a six-inch Rowland grating, with mountings and accessories by Brashear; a complete set of spectrum and Crooke's tubes by Geissler; mechanical models and apparatus from the Engineering Laboratory and the Instrument Company at Cambridge.

It is expected that in the course of the summer vacation a complete catalogue of the apparatus will be made and published, which may be of use to outside students and experimentalists who may wish to know what facilities the Laboratory may offer for any particular line of research.

4. TESTING LABORATORIES.—The principal experiments carried out in these will relate to the elasticity and strength of materials, friction, the theory of structures, the accuracy of springs, gauges, dynamometers, etc. The equipment of this laboratory includes:—

(1) A Wicketed 100-ton and an Emery 75-ton machine for testing the tensile, compressive and transverse strength of the several materials of construction. To the former has been added a specially designed arrangement, by which the transverse strength of girders and beams up to 26 ft. in length can be determined. These machines are provided with the holders required for the various kinds of tests, and new holders have also been specially designed and made in the laboratory for investigating the tensile and shearing strength of timber, for wire rope tests, etc. Numerous attachments have also been made to the machines, which have largely increased their efficiency.

(2) An Impact Machine, with a drop of 30 ft., and with gearing which will enable specimens to be rotated at any required speed and the blows to be repeated at any required intervals. By means of a revolving drum, a continuous and accurate record of the deflections of the specimens under the blows can be obtained.

(3) An Unwin Torsion Machine with a specially designed angle-measurer, by which the amount of the torsion can be measured with extreme accuracy.

(4) An Accumulator, furnishing a pressure of 3600 lbs. per square inch, which is transmitted to the several testing machines, and ensures a perfectly steady application of stress, which is impossible when any form of pump is substituted for an Accumulator.

(5) A Blake and a Worthington Steam Pump, designed to work against a pressure of 3600 lbs. per square inch. The Accumulator may be actuated by either of the pumps, and, if at any time it is desirable to do so, either of the pumps may be employed to actuate the testing machine direct. When in operation the work of the pump and the accumulator is automatic.

(6) Extensometers of the Unwin, Martens, Marshall and other types.

(7) An autograph recording stress strain apparatus.

(8) Portable cathetometers, and also a large cathetometer specially designed and constructed for the determination of the extensions, compressions and deflection of the specimens under stress in the testing machines.

(9) An Electric Motor Pump for actuating the Accumulator ; also various electric motors for working the several machines.

(10) A drying oven for beams up to 26 ft. in length. The hot air in this oven is kept in circulation by means of a fan driven by an electric motor.

(11) Numerous gauges, amongst which may be specially noticed an Emery Pressure Gauge, graduated in single lbs. up to 2500 lbs. per square inch. The whole of the testing machines are on the same pressure circuit, and are connected with the Emery gauge and also other standard gauges, including recording gauges. This arrangement provides a practically perfect means of checking the accuracy of the testing.

(12) Special apparatus and recording gauge for the testing of hose, etc.

(13) Dynamometers for measuring the strength of textile fabrics, the holding power of nails, etc.

(14) Apparatus for determining the elasticity of long wires.

(15) Apparatus for determining the hardness of materials of construction.

(16) Zeiss and other Microscopes.

(17) Delicate chemical and other Balances. A very important part of the equipment is the Oertling Balance, capable of indicating with extreme accuracy weights of from .00001 lb. up to 125 lbs.

(18) Micrometers of all kinds.

In the laboratories more especially devoted to the determination of the strength of materials, a very extensive investigation, in which the Third and Fourth Year students have taken part, has been carried out on the strengths of certain Canadian timbers. The experiments have now extended over a period of more than three years, and the results have been incorporated in a paper. The experiments have numbered some thousands, and are being continued.

An interesting investigation is also being conducted as to the strength and elasticity of iron and steel tubes under internal pressure.

During the session, in addition to the ordinary class exercises, important experiments have been made on the strength of car axles and on the strength and stiffness of various forms of rail-joint as compared with the solid rail.

CEMENT LABORATORY.—The importance of tests of the strength of mortars and cements is very great. The equipment of the laboratory for the purpose is on a complete plan, including:—

(1) Three one-ton tensile testing machines, representing the best English and American practice.

(2) One 50-ton hydraulic compressive testing machine.

(3) Volumenometers for determining specific gravity and for determining the carbonic acid in the raw material.

(4) Faja steaming apparatus for blowing tests.

(5) Mechanical hand and power mixers.

(6) Apparatus for determining standard consistency.

(7) Vicats and Gilmore's needles for determining set.

(8) Weighing hopper, spring and other balances.

(9) Gun metal moulds for tension, compression and transverse test pieces, and special moulds for placing mortar into the moulds



under a uniform pressure, which, together with the mechanical mixers, enable the personal error to be eliminated.

(10) Sieves of 20, 30, 40, 50, 60, 70, 80, 100, 120 and 180 meshes per lineal inch for determining the fineness.

The laboratory is also fitted with copper-lined cisterns, in which the briquettes may be submerged for any required time, and with capacious slated operating tables, bins and tin boxes for keeping the cement dry for any period.

In the Cement Testing Laboratory, researches have been made on the strength of mortars set under pressure, the effect of frost on natural and Portland cements, the effect of sugar on lime and cement mortars, the strength of lime and cement mortars and of the bricks in brick piers, the effect of fine grinding on the adhesive strength of cements, of using hot water in mixing mortars. Experiments have also been made on the strength of concrete blocks.

In addition to these researches, a large amount of work has been done by the Fourth Year students, in investigating the specific gravity, fineness, setting properties, constancy of volume, and the tensile, compressive and transverse strengths of cements, both neat and with sand.

5. THERMODYNAMIC LABORATORY.—The Thermodynamic Laboratory is furnished with an experimental steam engine of 100 I.H.P., specially designed for the investigation of the behaviour of steam under various conditions; there are four cylinders, which can be connected so as to allow of single, compound, triple or quadruple expansion, condensing or non-condensing, with or without jackets. The measurements of heat are made by large tanks, which receive the condensing water and the condensed steam. There are two hydraulic absorption brakes for measuring the mechanical power developed, and an alternative friction brake for the same purpose. Besides this large steam engine, a high speed automatic cut-off by Robb-Armstrong of Amherst, N.S., an Atkinson Cycle, and an Otto gas engine, a Stirling hot air engine by Woodbury Merrill of Ticonderoga, are provided and completely fitted for purposes of measurement and research. Many smaller instruments are provided or are in course of construction for illustrating the general principles of thermodynamics, such as calorimeters, delicate thermometers and gauges, a mercury column apparatus for investigating the properties of superheated steam and other working fluids, draft gauges, pyrometers, fuel testers, indicators, planimeters and a Moscrop recorder

A 40 horse power two-stage air compressor of modern design for a central station is under construction in the workshops of the College, and will, it is hoped, be added to the Laboratory during next session.

Of the six boilers which supply steam, four are fitted for experimental purposes.

The most recent addition to the equipment consists of a 45 H. P. Cornish boiler with Galloway tubes. This boiler will be used for heating and also for experimental purposes, and will work up to 100 lbs. per sq. in.

In the Thermodynamic Laboratory, the experimental engine has been completely fitted for testing, the cylinder drains altered, and a new set of jacket drains fitted, so that measurements of all jacket steam can now be made separately,—a unique feature in a quadruple engine. About fifty trials have been made. The experimental boiler has been mounted for forced draft trials; two of the Babcock-Wilcox boilers have been completely fitted up for experimental work, and with them about forty full boiler trials have been carried out.

Many experiments have also been made with the Robb automatic cut-off engine, fifty full trials having taken place, six of them with Hirn's analysis. The Atkinson gas engine and the hot air engine have also been tested a number of times. A mass of apparatus for testing the dryness of steam (including separating, throttling and super-heating calorimeters), a steam orifice, a Penberthy injector and a fuel calorimeter have been permanently fitted up, and form, together with numerous pyrometers, indicators and springs, the subjects of the preliminary part of the course.

A research on the transmission of heat through wrought-iron boiler tubes was carried out in the summer of 1893 by three students, and gave interesting results.

A research on the motion of heat through the walls of steam cylinders by the thermo-electric method has been carried out, and will, it is hoped, give important results.

## 6. ELECTRICAL LABORATORIES.—These consist of:—

(1) *The Electrical Laboratory proper*, where the standard instruments are kept and experiments made in the electrical course. The instruments comprise amongst others, two of Lord Kelvin's electric balances, a Thomson galvanometer, four d'Arsonval galvanometers, two Siemens dynanometers, two Kelvin electrostatic voltmeters, a complete set of Weston ammeters and voltmeters, besides resistance coils, etc.

Current is supplied to all parts of the room from one of the lighting dynamos direct and from the accumulator room.

(2) *The Magnetic Laboratory*.—Here are set up a ballistic galvanometer, Ewing's curve tracer, and a variety of apparatus made in the College for magnetic tests of various kinds.

(3) *The Dynamo Room*.—The apparatus here consists of a 25 K W Edison dynamo, two 12 K W Edison dynamos, a 12 K W Mordey alternator made specially for this laboratory (the coils on the armature can be moved round through any angle, and two or three currents of any phase difference obtained), a 7 K W Victoria dynamo, a 7 K W Fort Wayne dynamo, a 6 K W Thomson-Houston arc-light dynamo, a 15 K W Thomson-Houston incandescent dynamo, and a 5 K W Brush arc-light dynamo. All these are driven off magnetic clutch pulleys by an 80 horse power MacIntosh & Seymour engine. There are also here several different transformers, motors, arc lamps, etc., and a 3 K W motor generator.

(4) *The Lighting Station*.—This comprises a 30 K W Edison-Hopkinson dynamo, and a 30 K W Siemens dynamo, each driven by a Willans high speed engine. The switch-board is arranged so that the building—containing twelve hundred lights—can be lighted by the two dynamos in series, or, if the load is light, by one running on two-wire system or by accumulators. The whole is in every respect typical of the best English and American practice.

(5) *The Accumulator Room*.—Containing Crompton-Howell storage cells of a united capacity of eight hundred ampere hours.

During the past year, the advanced students in the Electrical Engineering Course have carried out an extensive series of experiments on different subjects of interest.

The electric elevator in the building formed the subject of an enquiry into the regulating and running of electric elevators generally, and much useful information was obtained as to the efficiency of worm gearing.

Tests of efficiency were made on transformers submitted by the makers, by a new method.

The photometer has been used for testing the candle-power and efficiency of a large number of incandescent lamps of different types.

Several samples of iron have been sent in for magnetic experiments, and have served a useful purpose in the students' work.

The efficiency of the magnetic clutches used in the dynamo room, which were designed at the College, was determined by a series of tests; these clutches have been running for three years, and have proved perfectly satisfactory.

An extended series of experiments has been made on armature reaction on some of the dynamos in the laboratory; these are now being completed, and will, it is hoped, give valuable results.

Arrangements are now being made for establishing a street railway testing de-

partment ; a standard street railway motor and other apparatus have been kindly lent by the Canadian General Electric Company for this purpose.

7. GEODETIC LABORATORY.—The equipment of this laboratory consists of :—

(1) Linear instruments.

- (a) A Rogers comparator and standard bar for investigating standards of length.
- (b) A fifty-foot standard and comparator for standardizing steel bands, chains, tapes, rods, etc.
- (c) A Whitworth end-measuring machine and set of standards.
- (d) A Munro-Rogers linear dividing engine.

(2) Circular instruments.

- (a) A Rogers circular comparator and dividing engine.
- (b) Two level triers.

(3) Time.

- (a) An astronomical clock and clock circuit in connection with the observatory clocks.
- (b) Chronometers running on mean and sidereal time.
- (c) Chronograph.

(4) Gravity.—A portable Bessel's reversible pendulum apparatus, with special pendulum clock and telescopic apparatus for observing coincidences of beats.

(5) A water gauge apparatus for testing aneroid barometers.

(6) Magnetic instruments :

- (a) A Kew dip circle.
- (b) A Kew filar magnetometer.

The laboratory is constructed with double walls and enclosed air spaces, and has a special heating apparatus so that the temperature within may be brought to, and held at, any desired degree.

The ordinary course of instruction in this laboratory is described in § XII. Art. 3.

ASTRONOMICAL OBSERVATORY.—The observatory equipment for the purpose of instruction in practical astronomy consists of :—

- 1) A Bamberg prismatic transit with zenith attachment.
- (2) Two astronomical transits for meridian observations. Collimating telescopes.
- (3) A Troughton & Simms zenith telescope.
- (4) An astronomical transit in the prime vertical.
- (5) Sidereal and mean time clocks and chronometers.
- (6) Chronograph and electrical circuits by which observations and clock comparisons within or without the observatory may be made.



8. **HYDRAULIC LABORATORY.**—Here the Student will study practically the flow of water through orifices of various forms and sizes, through submerged openings, over weirs, through pipes, mouth-pieces, etc.

The equipment of this laboratory includes :—

(1) A large Experimental Tank, 30 ft. in height and 25 sq. ft., in sectional area. With this tank experiments are conducted on the flow of water through orifices, either free or submerged. By a simple arrangement the orifices can be rapidly interchanged without lowering the head, and with the loss of only about one pint of water. The indicating and measuring arrangements connected with the tank are exceedingly delicate and accurate, and valuable results have already been obtained. By means of a special connection with the city water-supply, the available head of water may be increased up to 280 ft.

(2) An Impact Machine, which renders it possible to measure the force with which water flowing through an orifice, nozzle, or pipe, strikes any given surface, and also the impulsive effect of the water entering the buckets of hydraulic motors.

(3) A Rife's Hydraulic Ram.

(4) A Jet Measurer specially designed for investigating the dimensions of the jet produced in the phenomena known as "the inversion of the vein." With this apparatus it is possible to determine, within .001 inch, the dimensions of a jet in any plane and at any point of the path.

(5) Numerous orifices, nozzles and mouth-pieces.

(6) A specially designed stand-pipe, with all the necessary connections for pipes of various sizes for investigations on frictional resistance. The pressures are measured by recording gauges, etc.

(7) A flume about 35 feet in length, by 5 ft. in width by 3 ft. 6 ins. in depth.

(8) Weirs up to 5 ft. in width, and with a depth of water over the crest varying from nil to 8 inches.

(9) Numerous hydraulic pressure-gauges.

(10) A mercury column 60 feet in height.

(11) Gauge testing apparatus.

(12) Various rotary, and piston meters, and a Venturi meter.

(13) Apparatus for illustrating vortex motion.

(14) Apparatus for illustrating vortex ring motion, and for determining the critical velocity of water flowing through pipes.

(15) Five specially built gauging tanks with suitable indicators, and having a capacity of 800 cubic feet. Also other portable tanks.

(16) Transmission and absorption dynamometers.

(17) An experimental centrifugal pump.

(18) An inward-flow turbine, a new American turbine, a Pelton, and other motors and turbines.

This Laboratory is also provided with a set of pumps, specially designed for experimental work and research. They are adapted to work under all pressures up to 120 lbs. per sq. in., and at all speeds up to the highest found practicable. The set is composed of three vertical single acting plunger pumps of 7 in. diam., 18 in. stroke, driven by one shaft. They are to have two interchangeable valve chests, and it is arranged that both the valves and their seats may be removed and replaced by others.

In the Hydraulic Laboratory, investigations are being carried out on the flow of water through orifices of different sizes and forms, on the effect of viscosity upon the flow, and for the purpose of determining the co-efficients of discharge through conical nozzles.

Similar experiments and also experiments on the flow of water over weirs have been directly conducted by the students, who are thus able to obtain experience in the scientific treatment of hydraulic problems, which will certainly be of the utmost value to them in their future career.

During the Session, in addition to the ordinary class exercise, extensive tests have been made on the stretching and bursting strength of hose.

9. MECHANICAL LABORATORY.—In this Laboratory experiments will be carried out on the efficiency of belts, shafting, and machine tools. Governors of all types will be tested with the chronograph. Lubricants by journal friction-testing machine. Sliding and rolling friction and the stiffness of ropes will also form subjects for experiment.

Much valuable apparatus has been added to this laboratory since the opening of the Buildings, all of which has been made in the mechanical workshops, and mainly by students. The Thurston oil tester and the *Bunte's* viscosimeter, which formed the original equipment, have been supplemented by a hydraulic dynamometer for testing the efficiency of machines, a rotary transmission dynamometer on a new principle, with recording attachment, a pneumatic g. auge for measuring delicate pressures down to the 3000th of a lb. per square inch, two other draft gauges, a belt transmission dynamometer and a belt-testing apparatus.

With these instruments, experiments have been carried on during each session for a period of twenty full working days.

Many visits have also been paid to engineering works and manufactories of importance.

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#### § XIV. MUSEUMS.

The Peter Redpath Museum contains large and valuable collections in Botany, Zoology, Mineralogy and Geology, arranged in such a manner as to facilitate the work in these departments. Students have access to this Museum, in connection with their attendance on the classes in Arts in the subjects above named, and also by tickets which can be obtained on application. Students will also have the use of a Technical Museum, occupying the whole of the third storey of the Engineering Building. Amongst other apparatus the Museum contains the Reuleaux collection of kinematic models, presented by W. C. McDonald, Esq., and pronounced by Professor Reuleaux to be the finest and most complete collection in America.

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#### § XV. WORKSHOPS.

The workshops erected on the Thomas Workman Endowment have a floor area of more than 25,000 sq. ft.

The practical instruction in the workshops is designed to give the Student some knowledge of the nature of the materials of construction, to familiarize him with the more important hand and machine tools, and to give him some manual skill in the use of the same. For this purpose, the Student, during a specified number of hours per week, will work in the shops under the superintendence of the Professor of Mechanical Engineering, aided by skilled mechanics. The courses commence with graded exercises, and gradually lead up to the making of joints, members of structures, frames, etc., finally concluding in the iron-working department with the manufacture of tools, parts of machines, and, if possible, with the building of complete machines.

The equipment includes the following :

IN THE CARPENTER, WOOD-TURNING AND PATTERN-MAKING DEPARTMENTS.—Carpenters' and pattern-makers' benches, wood-lathes, a large pattern-maker's lathe, circular-saw benches, jig and band saws, buzz-planer, wood-borer, universal wood-worker, etc.

**IN THE MACHINE SHOP.**—The most improved engine lathes, a 36-in. modern upright drill, with compound table, universal milling machine, with vertical milling attachment, hand lathes, planer, universal grinding machine, universal cutter and reamer grinder, buffing machine, a 16-in. patent shaper, vise-benches, etc.

**IN THE SMITH SHOP.**—Forges, hand drill, and a power hammer.

**IN THE FOUNDRY.**—A cupola for melting iron, core oven, brass furnace, moulders' benches, etc.

The machinery in the shops is driven by a 50 I. H. P. compound engine and a 10 I. H. P. high speed engine.

In the workshops, a 40 H. P. air compressor has formed the staple object upon which energy has been spent. This, it is hoped, will be completed and added to the Thermodynamic Laboratory during the present year. A large boring bar, with automatic feed and double heads, an Emery brass buffing machine, an overhead travelling crane of one ton capacity, with two transverse motions, in the foundry; and two electric arc lamps and projecting lanterns complete for class demonstration, have been the principal results of steady application in the workshops.

### BOARDING HOUSES, ETC.

Good board and lodging may be obtained at \$18 per month; or separately, board at \$12 to \$14, and rooms \$5 to \$10 per month. The cost of drawing instruments for the whole course may be placed at from \$15 to \$30. Gown and overalls, \$7 to \$10. Books per session \$10 to \$30.

Estimated necessary cost per session of 7½ months, including fees, but exclusive of clothing and travelling expenses, \$270 to \$320.

Students can obtain a list of Boarding Houses on application to the Secretary. For notice of McGill Students' Club, see "University Societies."

### THE APPLIED SCIENCE GRADUATES' SOCIETY.

This Society has been recently established with a view to promote a closer relationship between the Faculty and the Graduates, and also between the Graduates themselves. The Society has issued a number of important bulletins relating to the work in the different departments, and giving an account of the development of the Faculty. The membership already includes more than one-third of the whole number of Graduates, and it is hoped that before long all of the Graduates will have joined the Society.

All information respecting the objects of the Society may be obtained on application to the Secretary. For Officers and Committees, see "University Societies."



## Special Announcement.

Through the munificence of Mr. W. C. McDonald, a Department of Architecture has been established in the Faculty, and the regular work of the new department will commence with session 1896-97.

During the Summer, a Professor of Architecture is to be appointed, and the efficiency of the Drawing Department is to be much increased by the addition of a Lecturer in Freehand Drawing and Descriptive Geometry.

The same benefactor has also rendered it possible for the University to place the Departments of Chemistry and Mining in a thoroughly efficient condition. The erection of a large building is to be proceeded with immediately, and the building will be equipped in the most approved manner, including not only provision for the several branches of Chemistry, but also for Mineralogy, Mining and Metallurgy. The Mining and Metallurgical Laboratories alone will have a floor space of about 10,000 square feet, and will be supplied with the most recent appliances for the milling and metallurgical treatment of ores, etc. A Professor of Mining will be appointed during the summer, and other important changes in the staff, all leading to increased efficiency, are to be made.

# FACULTY OF APPLIED SCIENCE—TIME TABLE.

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| YEARS HOURS,        | MONDAY.                                             | TUESDAY.                           | WEDNESDAY.                                                 | THURSDAY.                                          | FRIDAY.                             | SATURDAY.    |
|---------------------|-----------------------------------------------------|------------------------------------|------------------------------------------------------------|----------------------------------------------------|-------------------------------------|--------------|
| <b>FIRST YEAR.</b>  |                                                     |                                    |                                                            |                                                    |                                     |              |
| 9                   | Mathematics.                                        | Mathematics.                       | Mathematics.                                               | Mathematics.                                       | Mathematics.                        | Shopwork.    |
| 10                  | Mathematics.                                        | Mathematics.                       | Mathematics.                                               | Mathematics.                                       | Mathematics.                        | Do           |
| 11                  | English.                                            | French.<br>German.                 | French.<br>German.                                         | French.<br>German.                                 | Do                                  | Do           |
| 12                  | Chemistry.                                          | English.                           | Drawing.                                                   | Drawing.                                           | Chemistry.                          | Do           |
| 2 to 5              | Geom. Drawing.                                      | Shopwork.                          | Geom. Drawing (a).<br>Mathematical Lab. (b).               | Freehand Drawing.                                  | Pract. Chemistry.                   |              |
| <b>SECOND YEAR.</b> |                                                     |                                    |                                                            |                                                    |                                     |              |
| 9                   | Mathematics.                                        | Mathematics.                       | French.                                                    | Mathematics.                                       | French.                             | Shopwork, 4. |
| 10                  | Physical Laboratory.                                | German.                            | Mathematics.                                               | Chemistry, 5.<br>Surveying, 1, 4.                  | German.                             | Do           |
| 11                  | Do                                                  | Zoology, 1, 4.                     | Botany, 5.<br>Mathematics.                                 | Zoology, 1, 4.                                     | Mathematics.                        | Do           |
| 12                  | Do                                                  | Experimental Physics.              | Kinematics, 2, 3.<br>Surveying, 1, 4.                      | Experimental Physics.                              | Chemistry, 4, 5.                    | Do           |
| 2 to 5              | *Chemistry, 4, 5.<br>Mapping, 1.<br>Shopwork, 2, 3. | (c)<br>Desc. Geom., 1, 2, 3, 4, 5. | *Chemistry, 4, 5.<br>Mechl. Drawing, 2, 3.<br>Shopwork, 1. | Chemistry, 5.<br>Mapping, 1, 4.<br>Shopwork, 2, 3. | Physical Laboratory,<br>1, 2, 3, 5. |              |

\* The Chemical Laboratory is open to Second, Third and Fourth Year classes daily (Saturdays excepted) from 9 a.m. to 5 p.m.  
 Field work during September and October, 2 to 5 p.m. For and Year *Civil*, on Mondays, Tuesdays, Wednesdays, Thursdays and Fridays. For *Mining*, on Mondays, Tuesdays, Thursdays and Fridays. For and Year *Civil* and *Mining*, on Mondays, Tuesdays, Wednesdays, Thursdays and Fridays. For 4th year *Civil*, on Saturday mornings and two first clear evenings each week, 7 to 9.  
 (a) First Term. (b) Second Term. (c) After Nov. 1st.  
 1. Civil Engineering Students. 2. Electrical Engineering Students. 3. Mechanical Engineering Students. 4. Mining Engineering Students. 5. Practical Chemistry Students

# FACULTY OF APPLIED SCIENCE.—TIME TABLE.—Continued.

| YEARS       | HOURS  | MONDAY                                                      | TUESDAY                                                                          | WEDNESDAY                                                                              | THURSDAY                                                                                | FRIDAY                                                                                           | SATURDAY                                                      |
|-------------|--------|-------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| THIRD YEAR  | 9      | Experimental Physics,<br>1, 2, 3, 4, 5.                     | Mineralogy, (b), 4, 5.<br>*Surveying, (a), 1, 4.                                 | Dyn. of Mach., 2, 3.<br>Geology, 1, 4, 5.                                              | Experimental Physics,<br>1, 2, 3, 4, 5.                                                 | Desc. Geom., 1.<br>Mach. Design, 3.<br>Mineralogy, 4, 5.                                         | Electrical Eng. Lab., 2 (a).<br>Testing Lab., (b) 1, 2, 3, 4. |
|             | 10     | Dyn. of Mach., 2, 3.<br>Geology, 1, 4, 5.                   | *Surveying, (b) 1, 4.<br>Theory of Structures, (a),<br>1, 2, 3, 4.               | Desc. Geom., 1.<br>Mining, 4.<br>Shopwork, 2, 3.                                       | Chemistry, 5.<br>Machine Design, 2, 3.<br>Railroad Eng., 1, 4.                          | Geology, 1, 4, 5.<br>Mach. Design, 3.                                                            | Do                                                            |
|             | 11     | Mathematics, 1, 2, 3, 4.                                    | Theory of Structures,<br>1, 2, 3, 4.<br>Zoology, 5.                              | Shopwork, 2, 3.<br>*Surveying, 1, 4.                                                   | Mathematics, 1, 2, 3, 4.<br>Zoology, 5.                                                 | Mining, 4.<br>Theory of Structures, 1,<br>2, 3.                                                  | Do                                                            |
|             | 12     | Machine Design, 2, 3.<br>*Surveying, 1, 4.                  | Electrical Eng., 2 (a).<br>Theory of Structures, (b),<br>1, 2, 3, 4.             | Shopwork, 2, 3.<br>Municipal Eng., 1, 4.                                               | Theory of Structures,<br>1, 2, 3, 4.                                                    | Mathematics, 1, 2, 3, 4.                                                                         | Do                                                            |
|             | 2 to 5 | Chemistry, 4, 5.<br>Elect. Eng. Lab., 2 (a).<br>Mapping, 1. | Electrical Lab., 2.<br>Chemistry, 5.<br>Drawing, 1, 3, 4.<br>Mining, 4.          | Chemistry, 4, 5.<br>Physical Lab., 2.                                                  | Det. Mineralogy, 4, 5.<br>Mapping, 1.<br>Shopwork, 2, 3.                                | Chemistry, 5.<br>Phys. Lab., (a, b) 2, 4.<br>Cement. Lab., 1.                                    |                                                               |
| FOURTH YEAR | 9      | Thermodynamics,<br>1, 2, 3, 4.                              | Dyn. of Mach., 2, 3.<br>Mineralogy (a), 4, 5.                                    | Designing, 1.<br>Electrodynamics, 2.<br>Geology, 5.<br>Museum Work.                    | Thermodynamics, 1, 2, 3, 4.                                                             | Municipal Engineering, 1.<br>Electrodynamics, 2.<br>Metallurgy, 4, 5.<br>Thermo. Lab., 3.        | Hydraulic Lab., 3, 4.<br>Geodetic Lab., 1.                    |
|             | 10     | Hydraulics, 1, 2, 3, 4.                                     | Mechanical Lab., 3.<br>Metallurgy, 4, 5.<br>Shopwork, 2.                         | Designing, 1.<br>Electrical Eng. Lab., 2.<br>Museum Work.                              | Hydraulics, 1, 2, 3, 4.                                                                 | Elect. Eng. Lab., 2.<br>*Geodesy, 1.<br>Thermo. Lab., 3.                                         | Do                                                            |
|             | 11     | Machine Design, 2, 3.<br>*Geodesy, 1.<br>Geology, 4.        | Designing, 4.<br>Mechanical Lab., 3.<br>Shopwork, 2.<br>Theory of Structures, 1. | Designing, 1.<br>Electrical Eng. Lab., 2.<br>Museum Work.                              | Designing 4 (a).<br>Dyn. of Mach., 2, 3.                                                | Elect. Eng. Lab., 2.<br>Geology, 4.<br>Theory of Structures, 1.<br>Thermo. Lab., 3.              | Do                                                            |
|             | 12     | Railroad Eng., 1, 4.                                        | Designing, 4.<br>Mach. Lab., 3.<br>Shopwork, 2.                                  | Hydraulic Lab., 1, 2.<br>Electrical Eng. Lab., 2.<br>Mineralogy, 4, 5.<br>Museum Work. | Desc. Elect. Eng., (b),<br>2, 3.<br>Designing, 4 (a).<br>Mech. Eng., 3 (a).             | Elect. Eng. Lab., 2.<br>Theory of Structures, 1.<br>Thermo. Lab., 3.                             | Do                                                            |
|             | 2 to 5 | Assaying, 4.<br>Chemistry, 5.<br>Designing, 1, 2, 3.        | Chemistry, 5.<br>Mechanical Lab., 3.<br>Physical Lab., 2.<br>Testing Lab., 1, 4. | Assaying, 4.<br>Chemistry, 5.<br>Electrical Eng. Lab., 2.                              | Assaying, 4.<br>Chemistry, 5.<br>Designing, 3.<br>Physical Lab., 2.<br>Testing Lab., 1. | Chemistry, 5.<br>Designing, 4.<br>Elect. Eng. Lab., 2.<br>Designing, (a), 1.<br>Thermo. Lab., 3. |                                                               |

(a) First Term. (b) Second Term. (c) First half of first Term. (d) Second half of first Term. \* For field work see foot note page 49.  
1. Civil Engineering Students. 2. Electrical Engineering Students. 3. Mechanical Engineering Students. 4. Mining Engineering Students. 5. Practical Chemistry Students

# Faculty of Medicine.

THE PRINCIPAL (*ex-officio*).

## *Professors.*

|            |            |            |
|------------|------------|------------|
| WRIGHT,    | STEWART,   | BELL,      |
| MACCALLUM, | WILKINS,   | ADAMI,     |
| CRAIK,     | PENHALLOW, | BIRKETT,   |
| GIRDWOOD,  | MILLS,     | ALLOWAY,   |
| RODDICK,   | CAMERON,   | FINLEY     |
| GARDNER,   | BLACKADER, | LAFLEUR,   |
| SHEPHERD,  | RUTTAN,    | ARMSTRONG. |
| BULLER,    |            |            |

*Dean.*—R. CRAIK, M.D., LL.D.

*Registrar.*—R. F. RUTTAN, B.A., M.D., F.R.S.Can.

*Librarian.*—F. G. FINLEY, B.A., M.D.

*Director of Museum.*—J. G. ADAMI, M.A., M.D.

The Sixty-Fourth Session of this Faculty will be opened on Thursday, October 1st, 1896, by an introductory lecture at 3 p.m. Lectures for students of the first, second and third years will begin September 24th. The lectures in final subjects will begin on October 2nd at the hours specified in the time table, and will be continued for six months.

The Medical School of McGill University was founded in 1822 as the "Montreal Medical Institution," by Drs. W. Robertson, W. Caldwell, A. F. Holmes, J. Stephenson and H. P. Loedel—all of them at the time members of the staff of the Montreal General Hospital.

Although founded in 1822, yet no session of the "Medical Institution" was held until 1824, when it opened with 25 students; in 1844 the number of students in the Faculty was 50; in 1851, 64, with 15 graduates; in 1872-3, 154, with 35 graduates; in 1892-3, 315, with 46 graduates; in 1894-95, 403, with 54 graduates; in 1895-96, 412, with 90 graduates.

There were no sessions held during the political troubles from



1836 to 1839, and it is owing to this fact that the present is the 64th session of the Faculty. This is in reality the 67th session of the school, which is the direct continuation of the "Montreal Medical Institution."

In 1828, the "Medical Institution" was recognized by the Governors of the Royal Institution as the Medical Faculty of McGill University. At this time the lectures were given in a building on the site of the present Bank of Montreal. Later, the school was removed to a brick building still standing near the corner of Craig and St. George streets.

In 1846, the lectures of the Faculty were given in the present central building of the University, now occupied by the Faculty of Arts. On account of the inconvenience arising from the distance of the University Buildings from the centre of the city, it was decided in 1850 to erect a Medical school building in Coté street, provided with ample accommodation for Library and Museum, and furnished with a large dissecting room and two lecture rooms; this building was occupied for the first time during the session 1851-52, and sufficed for the wants of the Faculty until 1872-73, when the present main building was provided by the Governors of the University.

In 1885, the Building in the University grounds, erected by the Governors for the use of this Faculty, was found inadequate. A new building was then added, which, at the time, afforded ample facilities for carrying out the great aim of the Faculty,—that of making the teaching of the primary branches thoroughly practical.

Owing to the larger classes and the necessity of thorough laboratory teaching, the Lecture Rooms and Laboratories added in 1885 soon became insufficient in size and equipment to meet the requirements of the Faculty.

Mr. John H. R. Molson with timely generosity came to the aid of the Faculty, and in 1893 purchased property adjoining the College grounds, and enabled the Faculty to erect new buildings and extensively alter and improve those already in use.

These buildings were completed and officially opened by His Excellency the Earl of Aberdeen, Visitor of the University, January 8th, 1895.

As will be seen on reference to the plans in the special Calendar of the Medical Faculty, the new buildings have been erected as an

extension of the old ones towards the northwest, partially facing Carlton road, and convenient to the Royal Victoria Hospital. They connect the Pathological building acquired in 1893 with the older buildings, and comprise a large modern lecture room, capable of accommodating 450 students, with adjoining preparation-rooms and new suites of laboratories for Pathology, Physiology, Histology, Pharmacology and Sanitary Science. The laboratories, etc., in the older buildings, have been greatly enlarged and improved; the whole of the second floor has been devoted to the department of anatomy, and consists of dissecting-room, anatomical museum and bone-room, preparation rooms, Professors' and Demonstrators' rooms, and a special Lecture Room.

On the ground floor the Library and Museum have been greatly enlarged; a room forming part of the Library has been set apart as a reading-room for the use of students, where the extensive reference library of the Faculty may be consulted.

On this floor are situated also the Faculty room, the Registrar's office, the special museum for Obstetrics and Gynæcology together with Professors' rooms, etc. The chemical laboratories have been increased by including the laboratories formerly used by the department of Physiology.

In the basement are placed the janitor's apartments, cloak rooms, with numerous large lockers, the Lavatory, etc., recently furnished with the most modern sanitary fittings.

Through the great liberality of the Honorable Sir Donald A. Smith in founding the "Leaenchoil Endowment," and of the citizens of Montreal, and Medical Graduates in subscribing to the "Campbell Memorial Fund," the Faculty has been enabled to conduct and maintain the teaching of the different branches in a high state of efficiency.

The Faculty is glad to be able to announce that, by the liberality of the Honorable Sir Donald A. Smith in endowing the chairs of Pathology and Sanitary Science with one hundred thousand dollars, it is able to establish these departments on a footing fully commensurate with their importance and with the advances and requirements of modern medical science.

The attention of members of the Medical Profession is called to the Post Graduate and advanced courses established last Session in connection with this Faculty. (See Page 129.)

## MATRICULATION.

### I. REGULATIONS OF THE FACULTY OF MEDICINE OF MCGILL UNIVERSITY.

Every Student, before he can be enregistered as an undergraduate in Medicine, must present a certificate of having passed the Matriculation Examination of the Faculty of Arts or Medicine of this University, or of having passed some State or University examination accepted by this University.

Graduates or Matriculants in Arts of any recognized university, and those who have passed the Entrance Examination of a Provincial Medical Council, and thus become enregistered students in medicine of a province in Canada, are exempt from further preliminary examination.

Students from the United States, who have passed a State or University examination fully equivalent to that required by this University, may, at the discretion of the Faculty, be admitted to study without further examination.

The Matriculation Examination of this University for Medicine is held twice each year, in June and September, at the same time as that for Arts and Science. The fee for this examination is five dollars, payable on application to the Acting Secretary of the University, J. W. Brakenridge.

Papers for the June examinations will be sent to local centres on application to the Acting Secretary. An additional fee of four dollars, to meet local expenses, will be charged for such examination.

The September examinations are held just before the lectures in Medicine begin. These are held in McGill College, Montreal, only and at these examinations alternative books in Classics will be accepted.

The subjects for examination are Classics, Mathematics and English, and one of the optional subjects as below.

#### COMPULSORY SUBJECTS :—

**Latin.**—CÆSAR, Bell. Gall. Books I. and II. ; VIRGIL, *Æneid*, Book I., and Latin Grammar.

**Mathematics.**—Arithmetic (including metric system) ; Algebra, to quadratic equations inclusive ; Euclid's *Elements*, Books I., II., III.

**English.**—Writing from Dictation. A paper on English Grammar, including Analysis. A paper on the leading events of English history. Essay on a subject to be given at the time of the examination.

### OPTIONAL SUBJECTS ;—

*(One only of these subjects is required.)*

1. **Greek.**—XENOPHON, *Anabasis*, Book I. ; Greek Grammar.
2. **French.**—Le Bourgeois Gentilhomme and French Grammar.
3. **German.**—The first eighty pages of JOYNE'S German reader or equivalent and German grammar.
4. **Chemistry.**—(As in REMSEN'S *Elements of Chemistry*, pages 1-160) *and Physics* (GAGE and FESSENDEN'S *High School Physics*).

## II. REGULATIONS GOVERNING THE PRELIMINARY EXAMINATIONS OF CANADIAN AND ENGLISH LICENSING BODIES.

Students should bear in mind the fact that no degree in Medicine from a Canadian university carries with it a legal right to practise Medicine and Surgery in Canada, or in any other British possession. Each province in Canada has its own regulations regarding Entrance Examination, etc., and license to practise is conferred only on those who have complied with the regulations of the special province as to preliminary education, duration and course of study, etc. As the curriculum of professional studies of McGill University fully meets the requirements of all the Provincial Boards, attention will be called only to the regulations regarding Preliminary Education.

Each licensing body in England and Canada dates the period of beginning the study of Medicine from the time of passing the Entrance Examination accepted by it.

It is therefore of the highest importance that intending students should select that examination in preliminary education which will be accepted by the Licensing Board of the province or country in which they intend to practise their profession.

A. *To obtain a license to practise in England, India, or any other British Possession (Canada excepted).*

The Matriculation Examination in Medicine of this University, as described above, is accepted by the General Medical Council of Great Britain and Ireland. Graduates of this University desiring to enregister in England are thus exempted from any examination in preliminary education on production of the McGill Matriculation certificate together with a certificate that all the subjects of this Examination were passed at one time. Certificates of this University for attendance on lectures are also accepted by the General Medical Council.



*B. To obtain a license to practise in the Province of Quebec.*

No University Matriculation Examination is accepted by the College of Physicians and Surgeons of this Province. Graduates in Arts of any British or Canadian University are, however, exempted from examination, on presentation of their Diplomas.

Those who pass the Preliminary Examination described below, or Graduates in Arts who register as students in the C. P. & S., Quebec, on beginning their studies in Medicine, obtain, on graduating from McGill University, a license to practise in Quebec without further examination in any professional subject.

The requirements for this examination are :

**Latin.**—CÆSAR'S Commentaries, Bks. I., II., III., IV., and V.—VIRGIL'S Æneid, Bks. I. and II.—The Odes of HORACE, Bk. III., with a sound knowledge of the Grammar of the Language.

**English.**—For *English-speaking* candidates.—A critical knowledge of one of Shakespeare's plays, viz., Anthony and Cleopatra for 1895, with English Grammar, as in DR. SMITH or MASON.

For *French-speaking* candidates.—Translation into French of passages from the first eight Books of Washington Irving's Life of Columbus, with questions of Grammar. Translation into English of extracts from Fénelon's *Télémaque*.

**French.**—For *French-speaking* candidates.—A critical knowledge of Molière's *Le Bourgeois Gentilhomme*, Fénelon's *Aventures de Télémaque* and La Fontaine's *Fables*, Books I., II., III., with questions of Grammar and Analysis.

For *English-speaking* candidates.—Translation into English of passages from Fénelon's *Télémaque*, with questions of Grammar. Translations into French of easy English extracts.

**Belles Lettres and Rhetoric.**—Principles of the subject as in HAVEN'S *Rhetoric*, or BOYD'S *Rhetoric and Literary Criticism*. History of the Literature of the age of Pericles in Greece, of Augustus in Rome, and of the 17th and 18th centuries of England and France.

**History.**—Outlines of the History of Greece and Rome, with particular knowledge of the History of Britain, France and Canada.

**Geography.**—A general view, with particular knowledge of Britain, France and North America.

**Arithmetic.**—Must include Vulgar and Decimal Fractions, Simple and Compound Proportion, Interest and Percentages, and Square Root.

**Algebra.**—Must include Fractions and Simultaneous Equations of the First Degree.

**Geometry.**—Euclid, Books I., II., III. and VI., or the portion of plane Geometry covered by those Books. Also the measurement of the lines, surfaces and volumes, of regular geometrical figures.

**Chemistry.**—Outlines of the subject as in WARTZ or ROSCOE'S Elementary Chemistry.

**Botany.**—Outlines as in Laflamme or Spotton's text-book.

**Physics.**—Outlines as in Peck-Ganot's Physics.

**Philosophy.**—Elements of Logic as in JEVON'S Logic; Elements of Philosophy, as in CALDERWOOD'S Hand-book.

The Examinations will be held in September, 1896, at Quebec, and in July, 1897, at Montreal. (See Almanac in the special Calendar of Faculty of Medicine for exact date of examinations.) Applications to be made to Dr. Brosseau, Montreal, or Dr. Belleau, Quebec, either of whom will furnish schedule, giving text-books and percentage of marks required to pass in each subject.

Examination Fee, 20 dollars. Should the candidate be unsuccessful, one-half of the fee will be returned.

Of the four years' study *after* having passed the Matriculation Examination, three six months' sessions, at least, must be attended at a University, College, or Incorporated School of Medicine, recognized by the "Provincial Medical Board." The first session must be attended during the year immediately succeeding the Matriculation Examination, and the final session must be in the fourth year.

### *C. To obtain a license to practise in Ontario.*

To become an enregistered student of Medicine of the C. P. & S., Ontario, it is necessary to hold a degree in Arts of a recognized Canadian or British University, or to pass, before beginning the study of Medicine, the prescribed examination in Preliminary Education. This Examination is the University Departmental Matriculation Examination of the Ontario Education Department with science added and compulsory.

The subjects of this Examination for 1896 are :—

**Latin.**—A paper on Latin Grammar.

Translation from English into Latin Prose, involving a knowledge of Bradley's Arnold's Exercises, 1-24 inclusive, and 49-65 inclusive.

Translation, with the aid of a vocabulary, of easy passages from unspecified Latin Authors.

1896. { VIRGIL, ÆNEID, III.  
CÆSAR, Bellum Gallicum, V, VI.

**Mathematics.**—Arithmetic.

Algebra. Elementary rules; easy factoring; highest common measure; lowest common multiple; square root; fractions; ratio; simple equations of one, two and three unknown quantities; indices; surds; easy quadratic equations of one and two unknown quantities.

Euclid, Books I, II, III.

**History and Geography.**—Great Britain and her colonies, from the revolution of 1688 to the peace of 1815, and the Geography relating thereto.

Outlines of Roman History to the death of Augustus, and the Geography relating thereto.

Outlines of Greek History to the battle of Chæroneæ, and the Geography relating thereto.

**English.**—1. Composition:—Nothing but an essay will be required; this shall be dealt with, rather as a test of the candidate's knowledge of English composition than as a proof of his knowledge of the subject written upon. Legible writing, and correct spelling and punctuation will be regarded as indispensable, and special attention will be paid to the structure of sentences and paragraphs.

2. Grammar and Rhetoric:—The examination will be chiefly on passages not prescribed. A liberal choice of questions will be allowed to the candidate.

3. Poetical Literature:—Intelligent comprehension of and familiarity with the prescribed texts will be required:

1896. *Coleridge*:—The Ancient Mariner.

*Longfellow*:—Evangeline, A Gleam of Sunshine, The Day is done, The Old Clock on the Stairs, The Fire of Driftwood, Resignation, The Ladder of St. Augustine, A Psalm of Life, The Builders, The Warden of the Cinque Ports.

The following selections from Palgrave's Golden Treasury:

*Wordsworth*:—The Education of Nature, A Lesson, To the Skylark, To the Daisy, and the following Sonnets: To a Distant Friend, "O Friend! I know not which way I must look," "Milton! Thou shouldst be living at this hour," To Sleep, Within King's College Chapel.

*Campbell*:—"Ye Mariners of England," Battle of the Baltic, Hohenlinden, The River of Life.

*Coleridge*:—Youth and Age.

**Physics.**—An Experimental course in (a) Dynamics, (b) Heat, (c) Electricity, including an acquaintance with the Metric System of units. The courses are defined as follows:—

Dynamics: Definitions of velocity, acceleration, mass, momentum, force, moment, couple, energy, work, centre of inertia; statement of Newton's laws of motion; composition and resolution of forces; conditions for equilibrium of forces in one plane.

Definitions of a fluid, fluid pressure at a point, transmission of fluid pressure, resultant fluid pressure, specific gravity, Boyle's law, the barometer, air pump, water pump, siphon.

Heat : Effects of heat, temperature, diffusion of heat, specific heat, latent heat, law of Charles.

Electricity: Voltaic cell, chemical action in the cell, magnetic effect of the current, chemical effect of the current, galvanometer, voltmeter, Ohm's law, heating effect of the current, electric light, current induction, dynamo and motor, electric bell, telegraph, telephone:

**Chemistry.**—Definition of the object of the science, relations of the physical sciences to Biology, and of Chemistry to Physics, Chemical change, elementary composition of matter. Laws of combination of the elements, atomic theory, molecules. Avogadro's Law. The determination of atomic weight, specific heat, nomenclature, classification. The preparation, characteristic properties, and principal compounds of the following elements: Hydrogen, Chlorine, Bromine, Iodine, Oxygen, Sulphur, Nitrogen, Phosphorus, Carbon, Silicon.

**French.**—Grammar. Composition : (a) Translation into French of short English sentences as a test of the candidate's knowledge of grammatical form and structure, and the formation in French of sentences of similar character ; and (b) translation of easy passages from English into French.

Translation of easy passages from unspecified French authors.

An examination on the following texts :

1896. { ENAULT, Le Chien du Capitaine.  
      { FEUILLET, La Fée.

The Fee for this examination is \$20.00. Full details may be obtained by application to Dr. R. A. Pyne, Registrar, cor. Bay and Richmond sts., Toronto.

#### *D. To practise in the Maritime Provinces.*

The examination required by the Faculty of Medicine is accepted in the provinces of Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland.

Special matriculation examinations are held annually in New Brunswick and Nova Scotia, at dates stated in the Almanac, at the beginning of the special Calendar of Faculty of Medicine.



## § II.—ENREGISTRATION.

*The following are the University Regulations :—*

All Students desirous of attending the Medical Lectures shall, at the commencement of each Session, enrol their names and residences in the Register of the Medical Faculty.

The said Register shall be closed on the last day of October for 3rd and 4th year students, and on the 11th of October for first and second year students.

Fees are payable to the Registrar, and must be paid in advance at the time of enregistration.

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The class tickets for the various courses are accepted as qualifying candidates for examination before the various Colleges and Licensing bodies of Great Britain and Ireland, and the College of Physicians and Surgeons of Ontario. The degree in Medicine of this University carries with it at the Licensing Boards of Great Britain the same exemptions in certain subjects as are granted to all colonial degrees.

To meet the circumstances of the General Practitioners in British North America, where there is no division of the profession into Physicians and Surgeons exclusively, the degree awarded upon graduation is that of "Doctor of Medicine and Master of Surgery," in accordance with the general nature and character of the curriculum, as fully specified hereafter. The degree is received by the College of Physicians and Surgeons of the Province of Quebec, provided the graduate from this University matriculated before the College of Physicians and Surgeons of Quebec, when entering on the study of Medicine.

Any graduate therefore in Medicine of the University may obtain a license to practise in the Province of Quebec without further examination, if he has complied with the above regulations.

## TIME TABLE FOR SESSION 1895-96.

Time Tables for the Session of 1896-97 will be issued with the Lecture Room ticket on enrolment.

## TIME TABLE OF FIRST YEAR LECTURES.

| LECTURES.            | Monday           | Tues. | Wed.  | Thurs. | Fri.  | Sat.  | Lecture Theatre.                         |
|----------------------|------------------|-------|-------|--------|-------|-------|------------------------------------------|
| Anatomy.....         | 9                | 9     | 9     | 9      | 9     | ..... | Autumn and Winter terms—No. I.           |
| Physiology.....      | { .....<br>4     | 4     | ..... | 4      | ..... | ..... | No. I.<br>No. II.                        |
| Chemistry .....      | { .....<br>..... | 3     | ..... | 3      | 3     | ..... | Autumn Term—No. III                      |
| Zoology.....         | .....            | 11    | ..... | 11     | ..... | 10    | Winter and Spring terms—No. III.         |
| Botany.....          | .....            | 11    | ..... | 11     | ..... | ..... | Autumn and Winter Terms.<br>Spring Term. |
| Laboratory Work.     |                  |       |       |        |       |       |                                          |
| Prac. Anatomy ....   | 10-12            | 10-12 | 10-12 | 10-12  | 10-12 | 9-12  |                                          |
| *Prac. Physiology .. | .....            | ..... | 3-5   | .....  | ..... | ..... |                                          |
| *Prac. Histology...  | 2-4              | ..... | ..... | .....  | 4-6   | 10-12 |                                          |
| *Prac. Chemistry...  | 9-11             | 9-11  | 9-11  | 9-11   | ..... | ..... | Spring Term.                             |
| *Prac. Botany .....  | 11-12            | ..... | 11-12 | .....  | 10-12 | ..... | Spring Term.                             |

\* Class taken in divisions.

## TIME TABLE FOR SECOND YEAR.

| LECTURES.                                | Mon.                            | Tues.                           | Wed.                            | Thurs.                          | Fri.                            | Sat.            | Lecture Theatre.                                       |
|------------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------|--------------------------------------------------------|
| Anatomy .....                            | 9                               | 9                               | 9                               | 9                               | 9                               | .....           | Autumn and Winter Terms—No. I.                         |
| Physiology. ....                         | 2                               | .....                           | 2                               | .....                           | .....                           | .....           | No. I.                                                 |
| Chemistry.....                           | 3                               | .....                           | 3                               | .....                           | 3                               | .....           | Autumn Term No. II<br>Winter and Spring Terms—No. III. |
| Pharmacology<br>and<br>Therapeutics..... | { .....<br>4                    | .....                           | 4                               | .....                           | 4                               | .....           | No. I.                                                 |
| Laboratory Work.                         |                                 |                                 |                                 |                                 |                                 |                 |                                                        |
| Anatomy .....                            | { a.m.<br>10-12<br>p.m.<br>8-10 | { a.m.<br>10-12<br>p.m.<br>8-10 | { a.m.<br>10-12<br>p.m.<br>8-10 | { a.m.<br>10-12<br>p.m.<br>8-10 | { a.m.<br>10-12<br>p.m.<br>9-10 | { .....<br>9-12 | Autumn Term,<br>Autumn and Winter Terms.               |
| † Prac. Chemistry..                      | 10-12                           | 10-12                           | 10-12                           | 10-12                           | .....                           | .....           | Autumn Term.                                           |
| † Prac. Physiology.                      | .....                           | 2-4                             | .....                           | 2-4                             | .....                           | .....           |                                                        |

† Half the class only.

## TIME TABLE FOR THIRD YEAR LECTURES.

(From October 1st to June 15th.)

| LECTURES.                               | Mon.          | Tues.         | Wed.   | Thurs.        | Fri.          | Sat.  | Lecture Theatre. |
|-----------------------------------------|---------------|---------------|--------|---------------|---------------|-------|------------------|
| Gynaecology and Obstetrics.....         | .....         | 9             | .....  | 9             | .....         | ..... | II.              |
| Medicine.....                           | 5             | .....         | *11-12 | 5             | .....         | ..... | III.             |
| Surgery.....                            | .....         | 5             | *12-1  | .....         | 5             | ..... | III.             |
| Jurisprudence and Mental Diseases.....  | 4             | .....         | .....  | 4             | .....         | ..... | II.              |
| Pharmacology and Therapeutics.....      | .....         | 4             | 4      | .....         | .....         | ..... | III.             |
| General Pathology and Bacteriology..... | 10            | .....         | .....  | 10            | .....         | ..... | III.             |
| Hygiene.....                            | .....         | .....         | .....  | .....         | 4             | ..... | III.             |
| †Medical and Surgical Anatomy.....      | 9             | .....         | .....  | .....         | .....         | ..... | .....            |
| Morbid Anatomy.....                     | .....         | .....         | .....  | .....         | .....         | *9-11 | .....            |
| Clinical Medicine.....                  | .....         | 1 p.m. M.G.H. | .....  | 2 p.m. R.V.H. | .....         | ..... | .....            |
| Clinical Surgery.....                   | 2 p.m. R.V.H. | .....         | .....  | .....         | 1 p.m. M.G.H. | ..... | .....            |
| Prac. Pathology.....                    | .....         | †10-12        | †9-11  | .....         | .....         | ..... | Path. lab.       |
| †Clin. Chemistry.....                   | .....         | †10-12        | †9-11  | .....         | .....         | ..... | Chem. lab.       |

during winter term

NOTE.—Courses in Operative Surgery, Clinical Microscopy, Minor Surgery and other optional subjects will be arranged for later.

\*Alternate weeks M.G.H. and R.V.H. † Optional. ‡ Class taken in groups.

## TIME TABLE FOR FOURTH YEAR LECTURES.

| LECTURES.                        | Mon.  | Tues. | Wed.   | Thurs. | Fri.  | Sat.   | Lecture Theatre.      |
|----------------------------------|-------|-------|--------|--------|-------|--------|-----------------------|
| Gynaecology.....                 | ..... | 9     | .....  | .....  | ..... | .....  | II.                   |
| Obstetrics.....                  | 9     | ..... | 9      | .....  | ..... | .....  | II.                   |
| Medicine.....                    | 5     | ..... | †11-12 | 5      | ..... | .....  | III.                  |
| Surgery.....                     | ..... | 5     | ‡12-1  | .....  | 5     | .....  | III.                  |
| *Out-Patients Clinics.....       | ..... | ..... | 11     | .....  | ..... | 11     | M.G.H.                |
| Clinical Medicine.....           | 1     | ..... | .....  | .....  | 2     | .....  | R.V.H.                |
| Clinical Surgery.....            | ..... | 1     | .....  | 2      | ..... | .....  | M.G.H.                |
| Medical and Surg. Pathology..... | ..... | ..... | 5      | .....  | ..... | .....  | M.G.H.                |
| Ophthalmology.....               | ..... | ..... | 4      | .....  | ..... | .....  | R.V.H.                |
| *Clinical Ophthalmology.....     | 3     | ..... | 3      | .....  | ..... | .....  | III.                  |
| †Gynaecological Clinics.....     | 3     | 3     | .....  | 3      | 3     | .....  | II.                   |
| Gynaecological Operations.....   | ..... | ‡10   | .....  | 3      | ..... | .....  | M.G.H.                |
| Morbid Anatomy.....              | ..... | ..... | .....  | 9      | ..... | .....  | R.V.H.                |
| Clinical Obstetrics.....         | ..... | ..... | .....  | .....  | ‡9-11 | .....  | R.V.H.                |
| Dermatological Clinic.....       | ..... | ..... | 2      | .....  | ..... | 1-2.30 | III.                  |
| Genito-Urinary Clinic.....       | ..... | ..... | .....  | .....  | ..... | 3      | Mater- nity Hospital. |
| Diseases of Children Clinic..... | ..... | 2     | .....  | .....  | 2     | .....  | M.G.H.                |
| *Laryngology.....                | 4     | ..... | .....  | .....  | 4     | .....  | M.G.H.                |

\* In groups of ten.

† In groups of four.

‡ Alternate weeks M.G.H. and R.V.H.

### ‡ III.—COURSES FOR B.A. AND M.D. IN SIX YEARS.

By special arrangement with the Faculty of Arts, it is now possible for students to obtain the degree of B.A. along with M.D., C.M., after only six years of study.

It has been decided to allow the Primary subjects (Anatomy, Physiology and Chemistry) in Medicine to count as subjects of the third and fourth years in Arts. (See Faculty of Arts.) It follows then that at the end of four years study a student may obtain his B.A. degree and have two years of his Medical course completed.

The remaining two years of study are devoted to the third and fourth year subjects in Medicine.

The special provisions for Medical Students in the Arts course are as follows :

*In the First Year.*—Instead of the Chemistry appointed, a Medical Student may substitute one half of the Course in Chemistry required of students in the First Year of the Medical Faculty.

(NOTE.—Should, in the future, the Chemistry in the Faculty of Arts be made equivalent to that of the Faculty of Medicine, it may be taken by any Student proceeding to the Medical Degree in lieu of the Course in the Medical Faculty.)

*In the Second Year.*—The remaining half of the Course in Chemistry of the Medical Faculty may be substituted for the Psychology of the First Term and the Mathematical Physics of the Second Year. The Botany Course of the Medical Faculty may be substituted for the Botany in the Arts Course.

(NOTE.—The Faculty of Medicine advises Medical Students who are following the Courses in Arts prescribed for the two degrees to take the subject of Psychology if possible.)

*Third Year.*—Physiology and Histology with practical work therein, or Anatomy with Practical Anatomy, together with the regular examinations therein in the Faculty of Medicine, may be substituted for two courses under the heading of “Science” in the curriculum of the Third Year in Arts.

(NOTE.—If a special course of Physics for Medical Students should be established, Natural Philosophy may not be compulsory.)

*Fourth Year.*—Students who have completed the Third Year in Arts and First Year in Medicine shall have the same privileges in the Fourth Year as Honour Students in this year, viz., they shall be required to attend two only of the courses of lectures given in the ordinary departments (or one course with the additional course therein), and to pass the corresponding examinations only at the Ordinary B.A. Examination. These courses should for Medical Students be in either Languages or Literature.

Students are recommended in the Third and Fourth Years to continue the study of subjects which they have already taken in the First and Second Years.

In order to obtain the above privileges, the student must give notice at the commencement of the Session to the Dean of the Faculty of Arts, of his intention to claim them, and present a certificate from the Registrar of the Medical Faculty that his name is entered on the books of that Faculty. He must produce at the end of the sessions in the first two years a certificate of attendance on the required



lectures and of standing at the corresponding examinations. In the Third and Fourth Years, he must produce certificates that he has completed each year of the Medical curriculum.

A certificate of Literate in Arts (L. A.) will be given along with the professional degree in Medicine to those who, previous to entrance upon their professional studies proper, have completed two years in the Faculty of Arts, and have duly passed the prescribed examinations therein.

#### § IV.—GRADUATE AND ADVANCED COURSES.

The Faculty of Medicine in 1896 established Graduate and special courses in connection with the Montreal General and Royal Victoria Hospitals and the various Laboratories. These courses will be continued next session.

There will be two distinct sets of courses : one, a short practical and clinical course for medical men in general practice who desire to keep in touch with recent advances in Medicine, Surgery and Pathology, and who wish special clinical experience in Gynæcology, Ophthalmology, Laryngology, etc. This course will last a month from about the 1st of May to the middle of June, 1897.

A special detailed programme will be prepared, and will be sent on application in January next.

Arrangements have also been made to accommodate a limited number of graduates who desire advanced work.

Laboratories for higher work have been equipped in connection with the pathological and clinical departments of both the Royal Victoria and Montreal General Hospitals and in connection with the General Laboratories for Pathology, Physiology and Chemistry recently altered and extended in the new University Buildings.

Young graduates desiring to qualify for examinations by advanced laboratory courses, or who wish to engage in special research, may enter at any time by giving a month's notice, stating the courses desired and the time at their disposal.

All the regular clinics and demonstrations of both Hospitals will be open to such students on the same conditions as undergraduates in Medicine of this University.

These Laboratories will be open for graduates about May 1st, 1897.

Further details regarding courses, fees, etc., may be obtained on application to the Registrar after January, 1897.

#### § V.—QUALIFICATIONS FOR THE DEGREE.\*

1. No one entering after September, 1894, will be admitted to the Degree of Doctor of Medicine and Master of Surgery, who shall not have attended Lectures for a period of four nine months' sessions in this University, or some other University, College or School of Medicine, approved of by this University.

\* It shall be understood that the programme and regulations regarding courses of study and examinations contained in this Calendar hold good for this calendar year only, and that the Faculty of Medicine, while fully sensible of its obligations towards the students, does not hold itself bound to adhere absolutely to the conditions now laid down for the whole four years of student's course.

2. Students of other Universities so approved and admitted, on production of certificate, to a like standing in this University, shall be required to pass all Examinations in Primary and Final Subjects in the same manner as Students of the Faculty of this University.

3. Graduates in Arts who have taken two full courses in General Chemistry, including Laboratory work, two courses in Biology, including the subjects of Botany, Embryology, Elementary Physiology and dissection of one or more types of Vertebrata, may, at the discretion of the Faculty, be admitted as second-year Students, such courses being accepted as equivalent to the first year in Medicine. Students so entering will, however, not be allowed to present themselves for examination in Anatomy, until they produce certificates of dissection for two sessions.

4. Candidates for Final Examination shall furnish testimonials of attendance on the following branches of Medical Education,\* viz. :—

|                                     |                                               |
|-------------------------------------|-----------------------------------------------|
| Anatomy.                            | } Of which two full Courses will be required. |
| Practical Anatomy.                  |                                               |
| Physiology.                         |                                               |
| Chemistry.                          |                                               |
| Pharmacology and Therapeutics.      |                                               |
| Principles and Practice of Surgery. |                                               |
| Obstetrics and Diseases of Infants. |                                               |
| Gynaecology.                        |                                               |
| Theory and Practice of Medicine.    |                                               |
| Clinical Medicine.                  | } Of which one Full Course will be required.† |
| Clinical Surgery.                   |                                               |
| Medical Jurisprudence.              |                                               |
| General Pathology.                  |                                               |
| Hygiene and Public Health.          | } Of which one Course will be required.       |
| Practical Chemistry.                |                                               |
| Botany or Zoology.                  |                                               |
| Histology.                          |                                               |
| Pathological Anatomy.               |                                               |
| Bacteriology.                       |                                               |
| Mental Diseases.                    |                                               |

He must also produce Certificates of having assisted at six autopsies, and of having dispensed medicine for a period of three months.

5. Courses of less length than the above will only be received for the time over which they have extended.

6. No one will be permitted to become a Candidate for the degree who shall not have attended at least one full Session at this University.

7. The Candidates must give proof by ticket of having attended during eighteen months the practice of the Montreal General Hospital or of the Royal Victoria Hospital, or of some other Hospital of not less than 100 beds, approved of by this University.

8. He must give proof of having acted as Clinical Clerk for six months in Medicine and six months in Surgery in the wards of a general hospital recognized by the Faculty, and of having reported at least 10 medical and 10 surgical cases.

\* A course in medical, surgical and topographical anatomy will be given for students qualifying for the Ontario Medical Council.

† Provided, however, that Testimonials equivalent to, though not precisely the same as, those above stated may be presented and accepted.

9. He must also give proof by ticket of having attended for at least nine months the practice of the Montreal Maternity or other lying-in hospital approved of by the University, and of having attended at least six cases.

10. Every candidate for the degree must, on or before the 15th day of May, present to the Registrar of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Registrar of the Faculty an affirmation or affidavit that he has attained the age of twenty-one years.

11. The trials to be undergone by the Candidate shall be in the subjects mentioned in Section 4.

12. The following oath of affirmation will be exacted from the Candidate before receiving his degree :

#### SPONSIO ACAMEDICA.

In Facultate Medicinæ Universitatis.

Ego, A—— B——, Doctoratus in Arte Medica titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo :—me in omnibus grati animi officiis erga hanc Universitatem ad extremum vitæ halitum perseveraturum ; tum porro artem medicam caute, caste, et probe exercitaturum ; et quoad in me est, omnia ad ægrotorum corporum salutem conducentia cum fide procuraturum ; quæ denique, inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

13. The fee for the Degree of Doctor of Medicine and Master of Surgery shall be thirty dollars, to be paid by the successful candidate immediately after examination.

### § VI.—EXAMINATIONS.\*

Frequent oral examinations are held to test progress of the Student ; and occasional written examinations are given throughout the Session.

The Pass examinations at the close of each Session are arranged as follows :—

#### FIRST YEAR.

*Examinations* in BOTANY or ZOOLOGY, HISTOLOGY, PHYSIOLOGY, ANATOMY, CHEMISTRY, Theoretical and Practical.

Students who have taken one or more University courses in Botany or Chemistry before entering may be exempted from attendance and examination. Students exempted in their first year subjects are allowed only a pass standing, but may present themselves for examination if they desire to attain an honour standing.

Marks obtained in examinations in first year subjects will count for both Pass and Honours in the Primary examinations.

#### SECOND YEAR.

*Examinations* in ANATOMY, CHEMISTRY, PRACTICAL CHEMISTRY, PHYSIOLOGY, HISTOLOGY, PHARMACOLOGY and THERAPEUTICS.

\* See foot note, page 129.

## THIRD YEAR.

*Examinations* in PHARMACOLOGY and THERAPEUTICS, MEDICAL JURISPRUDENCE, HYGIENE, GENERAL PATHOLOGY, MENTAL DISEASES, CLINICAL CHEMISTRY, MEDICINE and SURGERY.

Marks obtained in third year subjects count for pass and honours in the final examinations.

## FOURTH YEAR.

*Examinations* in MEDICINE, SURGERY, OBSTETRICS, GYNÆCOLOGY, CLINICAL MEDICINE, CLINICAL SURGERY, CLINICAL OBSTETRICS, CLINICAL GYNÆCOLOGY, CLINICAL OPHTHALMOLOGY, PRACTICAL PATHOLOGY and BACTERIOLOGY.

By means of the above arrangement a certain definite amount of work must be accomplished by the student in each year, and an equitable division is made between the Primary and Final branches.

*A minimum of 50 per cent. in each subject is required to Pass and 75 per cent. for Honours.*

Candidates who fail to pass in not more than two subjects of either the first or second years may be granted a supplemental examination at the beginning of the following session.

Supplemental examinations will not be granted, except by special permission of the Medical Faculty, and on written application stating reasons, and accompanied with a fee of \$5.00 for each subject.

No candidate will be permitted, without special permission of the Faculty, to proceed with the work of the final year until he has passed the subjects comprised in the second examination.

No student will be allowed to present himself for his final examinations who has not certificates of having passed all his second year or Primary examinations in this University.

Candidates who fail to pass in a subject of which two courses are required may at the discretion of the Faculty, be required to attend a third course, and furnish a certificate of attendance thereon. A course in Practical Anatomy will be accepted as equivalent to a third course of lectures in General and Descriptive Anatomy.

## § VII. COURSES OF LECTURES.

The Corporation of the University, on the recommendation of the Faculty of Medicine, last year consented to the extension of the courses of lectures in Medicine over a period of about nine months instead of six.

By this means, (1) The Students of the Primary years have a more ample opportunity of becoming acquainted, by laboratory work, with those branches of study which form the scientific basis of their profession, and (2) the final Students will be able to derive the greatest benefit from the abundance of clinical material provided in the two Hospitals.



By this arrangement, while the actual number of didactic lectures per session will be decreased, there will be a corresponding increase in the amount of tutorial work and individual teaching in the laboratories for Chemistry, Physiology, Anatomy, Pathology and Hygiene, as well as giving more time, during the last two years of the course, for the thorough study of disease in the wards of the Royal Victoria and Montreal General Hospitals.

The Faculty expects, by thus increasing the time that the different professors, lecturers and demonstrators devote to each Student, to accomplish two very important ends: First, to do away with the injurious effects which result from attempting to condense the teaching of Medicine and Surgery into four or even five sessions of six months; Second, to give each Student a sounder and more thoroughly practical knowledge of his profession than could be obtained by attending during even five sessions of six months each.

### ANATOMY.

Professor :—FRANCIS J. SHEPHERD.

Senior Demonstrator and Lecturer on Surgical Anatomy :—J. M. ELDER.

Demonstrators :—J. G. MCCARTHY and J. A. SPRINGLE.

Assistant Demonstrators :—R. T. MACKENZIE, W. E. DEEKS and J. A. HENDERSON.

Anatomy is taught in the most practical manner possible, and its relation to Medicine and Surgery fully considered. The lectures are illustrated by the fresh subject, moist and dry preparations, sections, models and plates, and drawings on the blackboard.

Special attention is devoted to Practical Anatomy, the teaching being similar to that of the best European schools. The Dissecting Room is open from 8 a.m. to 10 p.m., the work being conducted under the constant supervision of the Professor and his staff of demonstrators. Special Demonstrations on the Brain, Thorax, Abdomen, Bones, etc., are frequently given. Every Student must be examined *at least* three times on each part dissected, and if the examinations are satisfactory, a certificate is given. Prizes are awarded at the end of the Session for the best examination on the fresh subject. Abundance of material provided.

### CHEMISTRY.

Professor :—GILBERT P. GIRDWOOD.

Inorganic Chemistry is fully treated; a large portion of the course is devoted to Organic Chemistry and its relations to Physiology. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration, abundant apparatus is possessed by the College.

The Chemical Laboratory will be open to the members of the class, to repeat experiments performed during the course, under the superintendence of the Professor or Lecturer.

## PRACTICAL CHEMISTRY.

Professor :—R. F. RUTTAN.

Demonstrator :—C. G. L. WOLF.

Laboratory instruction in Practical Chemistry is given during each of the first three years of study throughout one term.

The first year's course illustrates the general principles of chemical action and the properties of typical elements. During the second year the course will include methods of qualitative analysis and the detection of poisons. In the third year a course of clinical and sanitary chemistry will be given, in which the Student will be made familiar with the application of Chemistry to Public Health and to the diagnosis and prevention of disease. Special attention is directed to instructing Students in making accurate notes of his experiments and his conclusions. These notes are examined daily and criticized.

## PHYSIOLOGY.

Professor :—T. WESLEY MILLS.

Lecturer :—W. S. MORROW.

Demonstrator :—J. W. SKANE.

Assistant Demonstrator :—J. D. CAMERON.

The purpose of this Course is to make Students thoroughly acquainted, as far as time permits, with modern Physiology, its methods, its deductions, and the basis on which the latter rest. Accordingly a full course of lectures is given, in which both the Experimental and Chemical departments of the subject receive attention.

In addition to the use of diagrams, plates, models, etc., every department of the subject is experimentally illustrated. The experiments are free from elaborate *technique*, and many of them are of a kind susceptible of ready imitation by the student.

*Laboratory work for Senior Students :—*

(1) During the first part of the Session there will be a course on Physiological Chemistry, in which the Student will, under direction, investigate food stuffs, digestive action, blood, and the more important secretions and excretions, including urine. All the apparatus and material for this course will be provided.

(2) The remainder of the Session will be devoted to the performance of experiments which are unsuitable for demonstration to a large class in the lecture room, and require the use of elaborate methods, apparatus, etc., together with such as each individual student may conduct himself.

## HISTOLOGY.

Professor :—GEO. WILKINS.

Demonstrator :—N. D. GUNN.

This will consist of a course of lectures and weekly demonstrations with the Microscope. As the demonstrations will be chiefly relied upon for teaching the

Microscopic Anatomy of the various structures, the specimens under observation will then be minutely described. Plates and diagrams specially prepared for these lectures will be freely made use of.

## PHARMACOLOGY AND THERAPEUTICS.

Professor :—A. D. BLACKADER.

Assistant Demonstrator :—F. M. FRY.

The lectures on this subject are graded in the following manner :

During the Primary Course, attention will be directed chiefly to Pharmacology, including the important chemical and physical properties of the various drugs, and a brief consideration of their physiological action. Therapeutics will be considered only in outline. A complete museum of Materia Medica will afford the Student opportunity for making himself acquainted with the drugs themselves. During the spring session, a course of demonstration on Practical Materia Medica and Pharmacy will be given.

During the Final Course, the Physiological Action of Drugs will be dwelt upon at length, and attention will be given to Therapeutic Application of all Drugs and Remedial Measures. Prescription writing, and the various modes of administering drugs, will be explained and illustrated. During the course, a series of lectures will be delivered in the theatres of the hospitals on special cases or groups of cases, illustrating important points in both General and Special Therapeutics.

## MEDICINE.

Professor :—JAS. STEWART.

Assistant Professors :— $\left\{ \begin{array}{l} \text{F. G. FINLEY,} \\ \text{H. A. LAFLEUR.} \end{array} \right.$

Demonstrators :— $\left\{ \begin{array}{l} \text{G. G. CAMPBELL.} \\ \text{C. F. MARTIN.} \\ \text{W. F. HAMILTON.} \end{array} \right.$

While the lectures on this subject are mainly devoted to Special Pathology and Therapeutics, no opportunity is lost of illustrating and explaining the *general laws* of disease. With the exception of certain affections seldom or never observed in this country, all the important internal diseases of the body, except those peculiar to Women and Infants, are discussed, and their Pathological Anatomy illustrated by the large collection of morbid preparations in the University Museum, and by fresh specimens contributed by the Demonstrator of Morbid Anatomy. Several special lectures on diseases of children will be given during the beginning of the Session.

The College possesses an extensive series of Anatomical plates, illustrative of the Histological and Anatomical appearances of disease, and the wards of the General Hospital afford the lecturer ample opportunities to refer to living examples of very many of the maladies he describes, and to give the results of treatment.

## CLINICAL MEDICINE.

Professor :—JAS. STEWART.

Associate Professors :— { F. G. FINLEY,  
H. A. LAFLEUR.

Demonstrators :—G. G. CAMPBELL, C. F. MARTIN, W. HAMILTON.

The instruction in Clinical Medicine is conducted in the theatres, wards, out patient rooms and laboratories of the Royal Victoria and Montreal General Hospitals.

The courses include :—

I. The reporting of cases by every member of the Graduating Class, a certain number of beds being assigned to each student.

II. Bedside instruction for members of the Graduating Class.

III. Two Clinics weekly in each hospital.

IV. Tutorial instruction for the Junior Classes, in the wards and out-patient rooms of both hospitals.

V. Instruction in Clinical Chemistry and Bacteriology.

Reporting and note taking are required of every Student during his last two years.

## SURGERY.

Professor, THOMAS G. RODDICK.

Demonstrators, R. C. KIRKPATRICK, A. E. GARROW.

This course consists of the Principles and Practice of Surgery and Surgical Pathology, illustrated by a large collection of preparations from the Museum, as well as by specimens obtained from cases under observation at the Hospitals. The greater part of the course, however, is devoted to the Practice of Surgery, in which attention is constantly drawn to cases which have been observed by the class during the session. The various surgical appliances are exhibited, and their uses and application explained. Surgical Anatomy and Operative Surgery form special departments of this course.

## CLINICAL SURGERY.

Professor :—JAMES BELL.

Associate Professor :—GEO. ARMSTRONG.

Demonstrators :—A. E. GARROW, K. CAMERON.

This course is entirely practical. Two clinics are given weekly in the amphitheatres of each of the large general Hospitals (the Montreal General and the Royal Victoria), at which all operations are performed, the most important surgical dressings are done and the diagnosis and treatment of fractures and dislocations are illustrated by cases from the wards. Ward classes, limited to ten or



twelve students, are also held weekly in each of the hospitals for bedside instruction, and every student is required to act as clinical clerk for at least six months in the surgical wards of one or the other hospital, during which period he is personally taught case taking, physical examination, etc., and is required to take part in dressing and the administration of anæsthetics.

Students of the second year are required to attend each week the out-door clinics of the hospitals, where instruction in minor surgery and dressing is given.

### MIDWIFERY.

Professor :—J. C. CAMERON.

Demonstrator :—J. D. EVANS.

The course will embrace : 1. Lectures on the principles and practice of the obstetric art, illustrated by diagrams, fresh and preserved specimens, the artificial pelvis, complete set of models, illustrating deformities of the pelvis, wax preparations, bronze mechanical pelvis, etc. 2. Bedside instruction in the Montreal Maternity, including the management and after treatment of cases. 3. A complete course on obstetric operations with the phantom and preserved fetuses. 4. The Diseases of Infancy. 5. A course of individual clinical instruction at the Montreal Maternity. The course in Obstetrics is a graded one.

Particular attention is given to clinical instruction, and a clinical examination in Midwifery, similar to that held in Medicine and Surgery, now forms part of the final examination.

### GYNÆCOLOGY.

Professor, WM. GARDNER.

Associate Professor :—T. JOHNSON ALLOWAY.

Assistant Demonstrator :—F. A. L. LOCKHART.

The didactic course is graded, and consists of from forty to forty-five lectures given at intervals alternating with the lectures on Obstetrics, and extending throughout the session. The anatomy and physiology of the organs and parts concerned is first discussed. Then the various methods of examination are fully described, the necessary instruments exhibited, and their uses explained.

The diseases peculiar to women are considered as fully as time permits, some what in the following order :—Disorders of Menstruation ; Leucorrhœa ; Diseases of the External Genital Organs ; Inflammations, Lacerations and Displacements of the Uterus ; Pelvic Cellulitis and Peritonitis and Inflammations of the Ovaries and Fallopian Tubes ; Benign and Malignant growths of the Uterus ; Tumors of the Ovary ; Diseases of the Bladder and Urethra. The lectures are illustrated as fully as possible by drawings and morbid specimens.

Clinical teaching, including out-patient and bed-side instruction, is given both at the Royal Victoria and Montreal General Hospitals by Professors Gardner and

Alloway. A large amount of clinical material is thus available for practical instruction in this department of medicine. Numerous operations are done before the class, and made the subject of remarks. In addition to the ward-patients each hospital conducts a large out-patient Gynæcological Clinic, to which advanced students are admitted in rotation and instructed in digital and bimanual examination and in the use of diagnostic instruments.

## MEDICAL JURISPRUDENCE.

Professor:—GEO. WILKINS.

Lecturer on Mental Diseases:—J. W. BURGESS.

Lecturer on Medico-Legal Pathology:—WYATT JOHNSTON.

Special attention is devoted to the subject of blood stains, the Clinical, Microscopic and Spectroscopic tests for which are fully described and shown to the class. The various spectra of blood in its different conditions are shown by Zeiss' Microspectroscope, so well adapted for showing the reactions with exceedingly minute quantities of suspected material. Recent researches in the diagnosis of human from animal blood are alluded to. In addition to the other subjects usually included in a course of this kind, Toxicology is taken up. The modes of action of poisons, general evidence of poisoning, and classification of poisons are first treated of, after which the more common poisons are described, with reference to symptoms, post-mortem appearances, and chemical tests. The post-mortem appearances are illustrated by plates, and the tests are shown to the class.

A short course of demonstrations on medico-legal Pathology also forms part of the instruction in this department. This course includes post-mortem methods in medico-legal cases, the pathological conditions characteristic of the more important forms of violent death and the natural causes of sudden death which are liable to excite suspicions of homicide. The lectures are illustrated by specimens from the Coroner's Court.

## OPHTHALMOLOGY AND OTOTOLOGY.

Professor:—FRANK BULLER.

Demonstrator:—J. J. GARDNER.

This will include a course of lectures on diseases of the Eye and the Ear, both didactic and clinical. In the former, the general principles of diagnosis and treatment will be dealt with, including three lectures on the errors of refraction and faults of accommodation; in the clinical lectures given in the hospital, cases illustrative of the typical form of ordinary diseases of the eye and ear will be exhibited and explained to the class. In the out-patient department of each hospital, Students have excellent opportunities of gaining clinical experience.

## DEPARTMENT OF PUBLIC HEALTH AND PREVENTIVE MEDICINE.

Professor :—ROBT. CRAIK.

|                                                               |                                                                            |
|---------------------------------------------------------------|----------------------------------------------------------------------------|
| Sanitary Physics } PROF. CRAIK.<br>and Chemistry. { “ RUTTAN. | Preventive Medicine } PROF. ADAMI.<br>and Bacteriology. { DR. W. JOHNSTON. |
|---------------------------------------------------------------|----------------------------------------------------------------------------|

This Department will, this session, be placed among the major subjects of the course in medicine.

The regular lectures will comprise :—

(a). Sanitary Physics and Chemistry. by Professors Craik and Ruttan.

(b). Bacteriology and Preventive Medicine, including Serum-Therapy, by Professor Adami and Dr. Wyatt Johnston.

Two lectures per week will be given for the entire third year of the student's course.

Laboratory work in Practical Bacteriology etc., will be given in the Pathological Laboratory, and a course of Sanitary Chemistry, together with the use of disinfectants, will be given in the Chemical Laboratory in conjunction with the Clinical Chemistry.

These Laboratory Courses will be given twice per week for one term of three months.

A working museum and model room are now being equipped to illustrate fully and practically the principles of sanitation.\*

## BOTANY. †

Professor :—D. P. PENHALLOW.

The purpose of the course is to give Students a good grounding in the principles of General Morphology, and advance their knowledge of the comparative physiology of animals and plants, and enable them to determine readily such species of plants as may come under their observation.

1. Practical Morphology—the determination and classification of type specimens of Bryophytes, Pteridophytes and Spermatophytes. Special facilities for this course are offered by the morphological laboratory and the resources of the Botanic Garden.

2. A course of lectures on General Morphology and Classification, Histology and Physiology. The lectures are illustrated by the models and large collections in the Peter Redpath Museum.

3. Studies in Canadian Botany. This work is prosecuted by means of field-excursions which are held as often as opportunity is afforded during the autumn months.

4. A special collection of medicinal plants, now being formed at the Gardens, offers a valuable preparation in the course of Pharmacology.

\* Students may attend the Lectures on Sanitation in the Faculty of Applied Science, —Fee \$6.

† Exemptions from Botany in the Matriculation, for Arts Students, do not entitle Students to exemptions in the First Year. Students may take in their first year either Botany or Zoology, subject, however, to the provisions of the Law in the Province in which they intend to practise medicine. Students desirous to take both subjects in one year may apply to the Faculty for permission.

## PATHOLOGY.

Professor :—J. G. ADAMI.

Lecturer in Bacteriology :—WYATT JOHNSTON.

Lecturer in Pathology :—C. F. MARTIN.

Demonstrators :—W. J. BRADLEY and W. J. JAMIESON.

The following courses constitute the teaching on this subject :—

1. A course of General Pathology for Students of the Third Year (optional for those of the Fourth). This course extends from October to March, lectures being delivered thrice weekly.

2. A course in Bacteriology. This, which is a continuation of the course in General Pathology, extends from April to June.

3. A course of demonstrations in the performance of autopsies, for Students of the Third Year. The demonstrations are held once a week, from October until Christmas.

4. Demonstrations upon the autopsies of the week for Students of the two Final Years. These are given during the session by Dr. Adami at the Royal Victoria Hospital, and by Dr. Wyatt Johnston at the General Hospital.

*Practical Course.*

5. The performance of autopsies. Each student is required to take an active part in at least six autopsies. The autopsies are conducted at the General and Royal Victoria Hospitals by the Pathologists of these Hospitals and their assistants. In addition to the actual performance of the *sectio cadaveris*, students are expected to attend the practical instruction given in connection with each autopsy, in the method of preparation and microscopic examination of the removed tissues, so as to become proficient in methods of preparation, staining and mounting.

6. A practical course in Morbid Histology for Students of the Third Year. This class is held once a week during the winter months. Six sections are as a rule distributed at each meeting of the class, so that each student obtains a large and representative series of morbid tissues, and, upon an average, twenty minutes are devoted to the description and examination of each specimen. Laboratory fee to cover cost of slides, reagents, microscope, etc., \$5.

7. A practical course in Bacteriology with demonstrations ; held once a week during the summer term. Laboratory fee, \$3.

8. A course of demonstrations upon Morbid Anatomy (Museum specimens) once weekly during the winter months, for students of the Fourth Year.

In addition to the above the staff of the department give instruction to the more advanced students who desire to undertake any special work in the laboratories. In addition, classes in clinical pathology and microscopy are given from time to time, at the General and Royal Victoria Hospitals, under the direction of



the Professors of Clinical Medicine. In order to encourage special study, a prize is awarded annually to the student presenting the best research in any branch of pathology.

9. A practical course of Bacteriology for advanced students. Fee \$10.

In addition to the above, lectures upon Special Pathology are given by the Professor of Pathology in connection with the course in Medicine and Surgery.

### ZOOLOGY.\*

Lecturer :—W. E. DEEKS, Arts.

This course includes a systematic study of the classification of animals, illustrated by Canadian examples and by the collections in the Peter Redpath Museum. It forms a suitable preparation for collecting in any department of Canadian Zoology and Palæontology, and an introduction to Comparative Physiology. It may be taken instead of Botany, or along with it, without any additional fee. Students in Botany or Zoology will receive tickets to the Peter Redpath Museum and to the Museum of the Natural History Society of Montreal.

### LARYNGOLOGY AND RHINOLOGY.

Professor :—H. S. BIRKETT.

This course will consist of practical lessons in the use of the Laryngoscope and Rhinoscope. The instruction will be carried on with small classes, so that individual attention may be insured. A limited number of clinical lectures bearing upon interesting cases attending the clinic will be delivered during the session. These lectures will be, however, of an eminently practical nature.

### MENTAL DISEASES.

Lecturer :—T. J. W. BURGESS.

This course will comprise a series of lectures at the University on Insanity in its various forms, from a medical as well as from a medico-legal standpoint. The various types of mental diseases will be illustrated by cases in the Verdun Asylum, where clinical instruction will be given to groups of senior students at intervals throughout the session.

### PRACTICAL MICROSCOPY.

This is an entirely *Optional* Course, and will be conducted by Prof. Wilkins. It is intended especially for teaching the *technique* of Microscopy. Students will be shown how to examine blood, etc., also to cut, stain and mount specimens. Everything except over-glasses and cabinet cases provided. Fee \$8.

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\*See under " Botany," supra.

### § VIII. MEDALS AND PRIZES.

1. The "Holmes Gold Medal," founded by the Medical Faculty in the year 1865, as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine ; it is awarded to the Student of the graduating class who receives the highest aggregate number of marks in the different branches comprised in the Medical Curriculum.

The Student who gains the Holmes Medal has the option of exchanging it for a Bronze Medal, and the money equivalent of the Gold Medal.

2. The "Final Prize," a prize in Books, or a microscope of equivalent value, awarded for the best examination, written and oral, in the Final branches. The Holmes medalist is not permitted to compete for this prize.

3. The "Primary Prize," a prize in Books awarded for the best examination, written and oral, in the Primary branches.

4. The "Sutherland Gold Medal," founded in 1878 by the late Mrs. Sutherland in memory of her late husband, Professor William Sutherland, M.D. ; it is awarded for the best examination in Theoretical and Practical Chemistry, together with creditable examination in the Primary branches.

5. A Prize in Books for the best examination in Practical Anatomy.

6. A Prize in Books for the best examination in Botany.

7. The "Clemesha Prize in Clinical Therapeutics," founded in 1889 by John W. Clemesha, M.D., of Port Hope, Ont. It is awarded to the Student making the highest marks in a special clinical examination.

### § IX. FEES.

The total Faculty fees for the whole Medical course of four full sessions, including clinics, laboratory work, dissecting material and reagents, will be four hundred dollars, payable in four annual instalments of one hundred dollars each.

Partial Students will be admitted to one or more courses on payment of special fees.

An annual University fee of two dollars is charged students of all the Faculties for the maintenance of the College athletics.

(For graduation fee, see § V. supra.)

*All fees are payable in advance to the Registrar, and except by permission of the Faculty, will not be received later than 1st November.*

*It is suggested to parents or guardians of Students that the fees be transmitted direct by cheque or P.O. Order to the Registrar, who will furnish official receipts.*

## § X. TEXT-BOOKS.

ANATOMY.—Gray, Morris, Quain (Eng. ed.).

PRACTICAL ANATOMY.—Cunningham's Practical Anatomy, Holden's Dissector and Landmark's Ellis' Demonstrations.

PHYSICS.—Balfour Stewart.

INORGANIC CHEMISTRY.—Wurtz's Elementary Chemistry, Remsen's Text-Book.

ORGANIC CHEMISTRY.—Remsen.

PRACTICAL CHEMISTRY.—Odling.

PHARMACOLOGY and THERAPEUTICS.—White, Bruce, Hare, Wood, and National Dispensary.

PHYSIOLOGY.—Foster and Shore's Physiology for Beginners, Foster's Physiology, Mills' Text-Book of Animal Physiology and Class Laboratory Exercises.

PATHOLOGY.—Ziegler; Coates' Pathology.

PRACTICAL PATHOLOGY.—Delafield and Prudden, Payne, Boyce.

BACTERIOLOGY.—Abbott's Bacteriology.

HISTOLOGY.—Klein's Elements, Schafer's Essentials of Histology.

SURGERY.—Holmes, Moulin, Walsham, Erichsen, Treves, the American Text-Book of Surgery, DaCosta.

PRACTICE OF MEDICINE.—Osler, Strumpell and Fagge.

CLINICAL MEDICINE.—Musser's Medical Diagnosis, von Jaksch on Clinical Diagnosis.

MEDICAL JURISPRUDENCE.—Reese, Guy and Ferrier.

MIDWIFERY.—Lusk, American Text-Book.

DISEASES OF CHILDREN.—Smith, Goodhart and Starr.

GYNÆCOLOGY.—Thomas and Mundé, Skene, Garriques.

HYGIENE.—Parks, Wilson (American ed.).

BOTANY.—Gray's Text-Book of Histology and Physiology.

ZOOLOGY.—Shepley Invertebrata, Wiedersheim Vertebrata.

OPHTHALMOLOGY.—Nettleship, Higgins, De Schweinitz.

OTOLOGY.—Pritchard, Dalby.

LARYNGOLOGY.—Watson, Williams, Karl Seiler.

MEDICAL DICTIONARY.—Gould, Dunglison, Hoblyn.

## § XI.—MUSEUM.

Prof. J. G. ADAMI, Director.

E. J. SEMPLE, Assistant Curator.

M. BAILLY, Osteologist and Articulator.

For the past fifty years, the rich Pathological material furnished by the Montreal General Hospital has been collected here. The Faculty is also greatly indebted to many medical men throughout Canada and different parts of the world for important contributions to the Museum.

During the past few years, numerous and extremely important additions have been made to the Medical Museum. (See Special Announcement of the Faculty of Medicine.)

It is particularly rich in specimens of Aneurisms. In addition to containing a large number of the more common varieties of these formations, there are specimens of such rare conditions as Aneurism of the Hepatic and Superior Mesenteric Arteries, Traumatic Aneurism of the Vertebral, together with several of the Cerebral and Pulmonary Arteries. The most important collection probably in existence, of hearts affected with "Malignant Endocarditis," is also found. The Faculty is indebted to Prof. Osler, late of this University, for this collection.

The Museum contains also a very large collection of different forms of calculi. The Faculty is mainly indebted to the late Prof. Fenwick for this collection.

During recent years, Mr. Bailly, osteologist and articulator (lately with Tramond of Paris), has been engaged in arranging and mounting the very large number of specimens of disease and injuries of bones which have been accumulating for years. In this collection are to be found examples of fractures and dislocations of the spine, osteoporosis, congenital dislocation of the hip, fracture of the astragalus, multiple exostosis, etc., etc.

#### Obstetrical Department of the Museum.

Besides the ordinary pathological preparations, dry and moist, usually found in Museums, this department contains a complete set of models of deformed pelves, a series of preparations in wax illustrating the normal relations of the pelvic organs, the develop-



ment of the uterus and its contents during pregnancy, various abnormalities, twin pregnancy, foetal circulation, etc., a series of colored casts of frozen sections, Tarnier's artificial pelvis, Budin's bronze mechanical pelvis, models of obstetrical instruments, etc.

Additions are being constantly made, and ere long the department will possess a complete collection of models, casts, preparations and apparatus for the practical teaching and illustration of Obstetrics.

### Anatomical Museum.

In addition to the already large collection of normal and abnormal osteology, comparative and human skeletons of various classes of animals, moist preparations and frozen sections, the following preparations have been recently obtained :

(1) A series of articulated skeletons of fore and hind limbs of the various domestic animals prepared by the articulator, Mr. Bailly.

(2) Numerous moist preparations presented by the Professor and Demonstrator of Anatomy.

(3) A complete set of Steger's beautiful colored casts, taken from the celebrated frozen sections of Professors His and Braune of Leipzig. These preparations have been placed in the Museum so that they can be constantly consulted by the Students.

(4) (a) A complete set of Steger's brain sections ;

(b) Set of hardened brains with the various lobes, convolutions, ganglia, etc., in different colors ;

(c) Models of the cerebro-spinal and sympathetic nervous systems ;

(d) A set of Prof. D. J. Cunningham's beautiful casts of the brain in situ, showing the relations of convolutions to the skull.

(5) (a) A set of preparations showing the anomaly of vessels entering the kidneys ;

(b) A number of rare anomalies of the aorta and its branches ;

(c) A series of preparations showing the shoulder girdle in various animals.

*For additions to the Museum during the past year see special announcement of the Faculty of Medicine.*

## § XII. LIBRARY.

PROF. F. G. FINLEY, Librarian.

MISS M. R. CHARLTON, Assist. Librarian.

The Library of the Medical Faculty now comprises upwards of fourteen thousand volumes, the largest special library connected with any medical school on this continent.

The standard text-books and works of reference, together with complete files of the leading periodicals, are on the shelves. Students may consult any work of reference in the library between 10 a.m. and 5 p.m. A library reading room is provided.

## § XIII. MCGILL MEDICAL SOCIETY.

This Society, composed of enregistered Students of the Faculty, meets once a week during the spring term and fortnightly during the Winter, for the reading of papers and the discussion of medical subjects. It is presided over by a physician chosen by the members.

The Students' reading room has been placed under the control of this Society, in which the leading English and American Medical journals are on file, as well as the leading daily and weekly newspapers of the Dominion.

An extensive library of books of reference has also been established in connection with this Society.

## § XIV. COST OF LIVING, ETC.

This will, of course, vary with the taste and habits of the Student, but the necessary expenses need not exceed those in smaller towns. Good board may be obtained from \$15 to \$20 per month. A list of boarding houses which are inspected annually by a sanitary committee is prepared by the Secretary of the University, and may be procured from the Janitor at the Medical College.

## § XV. HOSPITALS.

The city of Montreal is celebrated for the number and importance of its public charities. Among these its public hospitals are the most prominent and widely known. Those in which Medical students of McGill University will receive clinical instruction are :—1.

The Montreal General Hospital; 2. The Royal Victoria Hospital; 3. The Montreal Maternity Hospital. The Montreal General Hospital has for many years been the most extensive clinical field in Canada. The old buildings, having proved inadequate to meet the increased demand for hospital accommodation, have recently been increased by the addition of the Campbell Memorial and Green-shields surgical pavilions and the new surgical theatre. The interior of the older buildings is now being entirely reconstructed on the most approved modern plans.

The Royal Victoria Hospital, at the head of University street, was opened for the reception of patients on the first of January, 1894, and affords exceptional opportunities for clinical instruction and practical training.

### **Montreal General Hospital.**

This hospital has been for many years the most extensive Clinical field in Canada.

It consists of a Surgical and a Medical Department.

The Surgical Department has two large pavilions, containing four wards 135 feet long by 35 broad, with an intervening and connecting building in which is a large operating theatre of the most modern type, capable of seating over three hundred and fifty students. In connection with this are preparation, etherizing, instruments, sterilizing and surgeons' rooms, also smaller operating rooms. The Surgical pavilions, which were built three years ago, accommodate over one hundred patients.

The old part of the hospital, consisting of the Reed, Richardson and Burland wings, has during the past year been completely rebuilt and remodelled and forms the Medical Department. This part contains four wards, 100 feet by 40 and is arranged for 150 beds. In this building there are wards for Gynaecological and Ophthalmological patients, of number a private wards and laboratories for Clinical Chemistry. There is also a medical amphitheatre capable of seating 150 students and a gynaecological operating room fitted up in the most modern manner. The central part of the old building is for administration purposes.

A completely new and commodious out-door patient department has been provided on the ground floor of the Richardson wing, and

there is ample accommodation for the various special departments as well as large rooms for general medical and surgical patients.

The Pathological Department is a completely new building and is provided with a post-mortem theatre and rooms for microscopical and bacteriological work, and also a mortuary and chapel. In this building students are offered every opportunity of perfecting their knowledge of morbid and pathological anatomy.

A large Fever Hospital under the management of the General Hospital has lately been built by the city and is situated at some distance off. It is under the medical charge of the physicians of the Montreal General Hospital, and at stated times small classes of students will visit the new hospital with the physicians in charge.

The old Fever Hospital on the grounds of the Hospital, has been completely remodelled, and is now used as a laundry and kitchen.

A much larger number of patients receive treatment in the Montreal General Hospital than in any other Canadian Hospital. Last year's report shows that between two and three thousand Medical and Surgical cases were treated in the wards, and the great proportion of these were acute cases, as may be gathered from the fact that the average duration of residence was only 24.02 days. Upwards of thirty-two thousand patients are annually treated in the out-door department of this Hospital.

Annual tickets entitling students to admission to the Hospital must be taken out at the commencement of the session, price \$5.00. These are obtained at the Hospital. Perpetual tickets will be given on payment of the third annual fee.

### **The Royal Victoria Hospital.**

This Hospital is situated a short distance above the University grounds, on the side of the mountain, and overlooks the city. It was founded in July, 1887, by the munificence of Lord Mount-Stephen and Sir Donald Smith, who gave half a million dollars each for this purpose, and have since endowed it with one million dollars in addition.

The buildings, which were opened for the reception of patients on the first of January, 1894, were designed by Mr. Saxon Snell of London, England, to accommodate between 250 and 300 patients.

The Hospital is composed of three massive buildings connected



together by stone bridges, an administration block in the centre, and a wing on the east side for medical patients, in immediate connection with which is the new Pathological wing and mortuary, and a wing on the west side for surgical patients.

The administration block contains ample accommodation for the resident medical staff, the nursing staff and domestics. The patients' entrance, the dispensary and admission rooms also are situated in this building.

The Medical wing contains three large wards, each 123 feet long by 26 feet 6 inches wide, one ward 40 feet by 26 feet 6 inches, and twenty-one private and isolation wards averaging 16 feet by 12 feet, also a Medical Theatre with a seating capacity for 250, and rooms adjacent to it for Clinical Chemistry and other purposes.

North of this wing and in direct connection with it are the Pathological laboratories and mortuary. In this wing are situated the mortuary proper with the most modern arrangements for the preservation of cadavers, the chapel, a post mortem room capable of accommodating 200 students, and laboratories for the microscopic and bacteriological study of morbid tissues, some designed for the use of students and others for post graduation courses and special research. Laboratories for Pathological Chemistry and Photography are also provided.

The surgical wing contains three large wards each 122 feet long by 26 feet 6 inches wide, four wards each 40 feet by 32 feet, and sixteen private and isolation wards averaging 16 feet by 12 feet; also a Surgical Theatre with a seating capacity for 250, with six accessory rooms adjacent for preparation and after-recovery purposes. In this wing are the wards for Gynæcology and Ophthalmology.

### Clinical Instruction.

During the session of 1895-96, two medical, two surgical, one gynæcological and one ophthalmological clinics will be held weekly in both the Montreal General and Royal Victoria Hospitals.

Tutorial instruction will also be given in these different departments, in the wards, out-patients' rooms and laboratories.

Special weekly clinics will be given in the Montreal General Hospital on Dermatology and Laryngology, and in the Royal Victoria Hospital on diseases of the Genito-Urinary system.

CLINICAL CLERKS in the medical and surgical wards of both hospitals are appointed every three months, and each one during his term of service conducts, under the immediate direction of the Clinical Professors, the reporting of all cases in the ward allotted him. Students entering on and after October next will be required to show a certificate of having acted for six months as clinical clerk in medicine and six months in surgery. The experience so gained is found to be of the greatest possible advantage to the Student, as affording a true *practical* training for his future professional life.

DRESSERS are also appointed to the Out-door Departments. For these appointments, application is to be made to the assistant surgeons, or to the resident surgeon in charge of the out-patients' department.

The large number of patients affected with diseases of the eye and ear, now attending the out-door department, will afford Students ample opportunity to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the ophthalmoscope, and it is hoped that every student will thus seek to gain a practical knowledge of this important branch of Medicine and Surgery. Operations are performed on the eye by the Ophthalmic Surgeon after the out-door patients have been seen, and Students are invited to attend the same, and as far as practicable, to keep such cases under observation so long as they remain in the Hospital.

There are now special departments in both Hospitals for Gynecology as well as for Ophthalmology.

### **The Montreal Maternity.**

The Faculty have great pleasure in announcing that the corporation of the Montreal Maternity have recently made very important additions to their building, and have still further improvements in contemplation. Students will therefore have greatly increased facilities for obtaining a practical knowledge of obstetrics. An improved Tarnier-Budin phantom is provided for the use of the Students, and every facility afforded for acquiring a practical knowledge of the various obstetric manipulations. The institution is under the direct supervision of the Professor of Midwifery, who

devotes much time and attention to individual instruction. Students who have attended the course on obstetrics during the Autumn and Winter terms of the third year will be furnished with cases in rotation, which they will be required to report and attend till convalescence. Clinical midwifery has been placed upon the same basis as Clinical Medicine and Surgery, and a final clinical examination instituted. Regular courses of clinical lectures are given throughout the session. During the Autumn and Winter terms the demonstrator of Obstetrics gives clinical demonstrations in the wards and instruction in operation work on the phantom. Students will find it very much to their advantage to pay special attention to their clinical work during the spring term of the third year and the following summer. Two resident accoucheurs are appointed yearly from the graduating class, to hold office for a period of six months each.

Fee for twelve months, \$12, payable at the Maternity Hospital.

### § XVI. STUDENTS' APPOINTMENTS.

General Hospital—Five Resident Medical Officers.

Royal Victoria Hospital—Six Resident Medical Officers.

Clinical Clerk, Gynæcology.

“ “ Laryngology.

“ “ Diseases of Children.

“ “ Dermatology.

“ “ Diseases of Nervous System.

University Maternity—Two Resident Medical Officers.

Out-Door Dressers.

Dressers in Eye and Ear Departments.

Surgical Dressers (in-door).

Medical Clinical Clerks.

Post-mortem Clerks.

Student Demonstrators of Anatomy, 4 third-year Students.

Prosectors to Chair of Anatomy, 2.

Assistants in Practical Histology Course, 2.

Assistants in Practical Physiology Course, 6.

Assistants in Practical Chemistry, 6.

### § XVII. RULES FOR STUDENTS.

1. In the case of disorderly conduct, any Student may, at the discretion of the Professor, be required to leave the Class-room. Persistence in any offence against discipline after admonition by the Professor shall be reported to the

Dean of the Faculty. The Dean may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from classes.

2. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

3. While in the College, Students are expected to conduct themselves in the same orderly manner as in the Class-room.

When Students are brought before the Faculty under the above rules, the Faculty may reprimand, impose fines, disqualify from competing for prizes and honours, suspend from Classes, or report to the Corporation for expulsion.



# Faculty of Law.

THE PRINCIPAL : Ex Officio.

## PROFESSORS.

L. H. DAVIDSON, Q.C., M.A., D.C.L.

HON. MR. JUSTICE WURTELE, D.C.L.

C. A. GEOFFRION, Q.C., D.C.L.

A. MCGOUN, M.A., B.C.L.

T. FORTIN, LL.L., B.C.L.

HON. MR. JUSTICE DOHERTY, D.C.L.

W. DE M. MARLER, B.A., B.C.L.

E. LAFLEUR, B.A., B.C.L.

## LECTURER.

P. C. RYAN, B.C.L.

Acting Dean, L. H. DAVIDSON, Q.C., M.A., D.C.L.

Secretary and Registrar ; ARCHIBALD MCGOUN, M.A., B.C.L.

Matriculation Examiner ; EUGENE LAFLEUR, B.A., B.C.L.

The complete course of Lectures in this Faculty extends over three years and comprises all the leading branches of Legal Study ; and is designed to fully qualify those who faithfully follow it for admission to the Bar of Lower Canada.

From the fact that the system of law prevailing in the Province of Quebec rests upon the principles established in the Roman Law and in the Civil Law of France, embracing also the Commercial and Criminal Law of England as modified by our own legislation, it is believed that those availing themselves of the opportunity offered by the course of the Faculty of Law of McGill obtain a more extended and comprehensive knowledge of legal subjects and are better qualified for practice in any field than is possible under more limited conditions.

The course of Study pursued—embracing Constitutional Law and History, and familiarizing the student with the close and definite reasoning of the great Civil Law writers—affords admirable preparation for public life, as is evidenced by the fact that graduates of this Faculty are and have been for years foremost in the field of politics.

It is also believed that to those engaged in business life the course in Commercial Law will be found specially advantageous and helpful, and can be availed of under the provision made for particular or special Courses.

Students have the free use of the Law Library of the Faculty comprising the law libraries of the late F. Griffin, Q.C. ; Mr. Chancellor Day and Mr. Justice MacKay, as also that of the late Mr. Justice Torrance, belonging to the Fraser Institute, which has now been removed to the Redpath Library Building in the College Grounds ; and where a special room has been provided for the law students for reading and consultation.

The Lectures are delivered in the new and well appointed rooms provided for the Faculty in the East Wing of McGill by the generosity of its already munificent benefactor, W. C. McDonald, Esq.

While the Faculty accepts for matriculation the requirements stated in the Regulations below, it nevertheless strongly recommends students intending to study law to take the B. A. course in the Faculty of Arts as a preliminary qualification ; and if that be not attainable, as much as possible of the Arts course.

#### LECTURES AND EXAMINATIONS.

The classes in Law will begin on Monday, 7th September, 1896, at 4 p.m.

The Supplemental and Matriculation Examinations will be held on the same day, at 10 a.m.

The lectures will be delivered in two terms : the first beginning on Monday, 7th September, 1896, and the second beginning on Monday, 4th January, 1897.

The Examinations will be held in the William Molson Hall, McGill College building, at Christmas, and at the close of the session, and as announced below, unless otherwise determined by the Faculty.

The complete course of study in this Faculty extends over three years. Attendance at lectures is required of all students proceeding to the degree of B.C.L.

#### SCHOLARSHIPS AND PRIZES.

Two scholarships, each of one hundred dollars, are offered for competition, the preference being given to students whose domicile

is not in Montreal or vicinity. They will be awarded, after the Sessional Examinations in April, 1897, upon the results of the Examinations of the first year, and will be payable during the second year.

Prizes open to competition by all the students except the medalist and holders of scholarships will also be given to the students taking the best standing in each year.

No scholarship or prize shall, however, be awarded to any student unless a sufficiently high standing, in the estimation of the Faculty, be attained, to merit it.

#### CLASSIFICATION OF STUDENTS.

Matriculated Students who do not take the whole course are classed as Partial Students, and are not entitled to proceed to the Degree of B.C.L.

Occasional Students will be received without matriculation for attendance on any particular series of Lectures.

Students who have completed their course of three years, and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Faculty, to the Degree of Bachelor of Civil Law.

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#### FACULTY REGULATIONS.

1. Any person desirous of becoming a Matriculated Student may apply to the Secretary, Prof. McGoun, 181 St. James Street, for examination and entry in the Register of Matriculation, and may procure a ticket of Matriculation and tickets of admission to the Lectures for each Session of the Course.

2. The Degree of B.A. obtained from any Canadian or other British University; or a certificate of having passed the examination before the Bar for admission to study Law in the Province of Quebec; or the intermediate Examination in the Faculty of Arts in McGill University, will be accepted in lieu of Examination for Matriculation in this Faculty. For other candidates the Matriculation Examination this year will be in the following subjects:—

*Latin*.—Virgil, *Aeneid*, Book I.; Cicero, Orations I. and II. against Catiline, Latin Grammar.

*French*.—De Fivas' "Grammaire des Grammaires;" \*Molière, "Le Bourgeois Gentilhomme"; †Translation into French of Macaulay's Essay on Frederick the Great.

*Exercises in Composition* and Grammatical Analysis, in English and French.

*Mathematics*.—Arithmetic ; Algebra to the end of Simple Equations ; Euclid, Books. I., II., III.

*History*.—White's Outline of Universal History (or any equivalent manual) ; \*Green's Short History of the English People ; Miles' School History of Canada ; †Duruy, Histoire de France.

*Literature*.—\*Collier's Biographical History of English Literature ; † Laharpe Cours de Littérature ; † Lefranc, Cours de Littérature.

*Rhetoric*.—Whately's Rhetoric ; Blair's Lectures (small edition).

*Philosophy*.—\*Whately's Logic ; † Logique de Port Royal ; †Cousin, Histoire de la Philosophie ; \*Stewart's Outline of Moral Philosophy.

N.B.—The works mentioned above preceded by an asterisk are for English Students only. Those preceded by a cross are for French Students only. The remainder are for both English and French.

3. Students of Law shall be known as of the First, Second and Third Years, and shall be so graded by the Faculty. In each year, Students shall take the studies fixed for that year, and those only, unless by special permission of the Faculty.

4. The register of Matriculation shall be closed on the 1st November in each year, and return thereof shall be immediately made by the Dean to the Registrar of the University. Candidates applying thereafter may be admitted on a special examination to be determined by the Faculty ; and, if admitted, their names shall be returned in a supplementary list to the Registrar.

5. Persons desirous of entering as Partial Students shall apply to the Dean of the Faculty for admission as such Students, and shall obtain a ticket or tickets for the class or classes they desire to attend.

6. Students who have attended collegiate courses of legal study in other Universities, for a number of terms or sessions, may be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

7. All students shall be subject to the following regulations for attendance and conduct :—

(a) Gowns must be worn during attendance at lectures and when in the College building.

(b) A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted, and the said class-book shall be submitted to the Faculty, at each monthly meeting ; and the Faculty shall, after examination of such class-book, decide which Students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

(c) Punctual attendance on all the classes proper to his year is required of each Student. Professors will note the attendance immediately on the commencement of their lectures, and will omit the names of Students entering thereafter,



unless satisfactory reasons are assigned. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to and from it, Students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the Student, and, if necessary, report him to the Dean.

(d) When students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

(e) Any Student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

(f) The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

(g) All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice Principal.

8. The College year shall be divided into two terms, the first extending to the Christmas vacation, and the second from the expiration of the Christmas vacation to the end of April following.

The lectures will be delivered between the hours of half past eight and half-past nine in the morning, and between four and half-past six in the afternoon; and special lectures in the evening, at such hours and in such order as shall be determined by the Faculty. Professors shall have the right to substitute an examination for any such lecture.

9. At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors, and of such other examiners as may be appointed by the Corporation; which examination shall be conducted by means of printed questions, answered by the Students in writing in the presence of the Examiners. The result shall be reported as early as possible to the Faculty.

After the examinations at the close of the second term, the Faculty shall decide the general standing of the Students, taking into consideration the examinations of both terms, both of which examinations shall be considered the Sessional or Final Examinations for the college year, as the case may be.

10. No Student shall be considered as having kept a Session unless he shall have attended regularly all the courses of Lectures, and shall have passed the Sessional Examinations to the satisfaction of the Faculty in all the classes of his year.

11. The Faculty shall have the power, upon special and sufficient cause shown to grant a dispensation to any Student from attendance on any particular Course or Courses of Lectures, but no distinction shall in consequence be made between the Examinations of such Students, and those of the Students regularly attending Lectures.

12. No Student shall pass the Degree of B.C.L. unless he has prepared a Thesis, either in French or English, which shall have been approved by the Faculty. The subject of such Thesis shall be left to the choice of the Student, but it must fall within the range of study of the Faculty, and shall not exceed twenty pages of thirty lines each. Each Student shall, on or before the first day of March, forward such Thesis to the Secretary of the Faculty, marked with the *nomen de pume* which he shall adopt, and accompanied with a sealed envelope, bearing the same *nomen de pume* on it, and containing inside his name and the subject of his Thesis, and the envelope shall be opened in presence of the Faculty after the final decision shall be given on the respective merits of the several Theses.

13. The Elizabeth Torrance Gold Medal, in the Faculty of Law, shall be awarded to the Student, who, being of the Graduating Class, having passed the Final Examinations, and having prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him to compete, shall take the highest marks in a special Examination for the Medal, which examination shall include the subject of Roman Law.

14. Every Candidate, before receiving the Degree of B.C.L., shall make the following declaration :—

Ego A.B. polliceor, me, pro viribus meis, studiosum fore communis hujus Universitatis boni, operamque daturum ut decus ejus ac dignitatem amplificem, et officiis omnibus ad Baccalaureatus in Jure Civili gradum pertinentibus fungar.

15. The fees in the Faculty are as follows :—

|                                                                                                                                                  |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Matriculation or Registration Fee .....                                                                                                          | \$ 5 00 |
| Sessional Fee by Ordinary Students.....                                                                                                          | 36 00   |
| Grounds Fee, payable by all Students including Partial.....                                                                                      | 2 00    |
| Graduation Fee, including registration as voter in election of fellows....                                                                       | 12 50   |
| Fee for supplemental examination .....                                                                                                           | 5 00    |
| Sessional Fee by Partial Students, for each course.....                                                                                          | 3 00    |
| For Partial Students who are students in other departments of the University or affiliated Colleges, taking two or more courses, a single fee of | 5 00    |

Matriculation and Sessional Fees must be paid on or before Nov. 1st ; and if not so paid, the name of the Student shall be removed from the books, but may be re-entered by consent of the Faculty, and on payment of a fine of not less than \$3. Students already on the books of the University shall not be required to pay any Matriculation Fee.

16. Partial Students may be admitted into any class on such terms as shall be arranged by the Faculty.

17. The requirements and conditions for obtaining the Degree of D.C.L. in course can be ascertained upon application to the Secretary of the Faculty.

For notice of McGill Students' Club, see "University Societies."

## SYLLABUS.

Monday, 7th September, 1896, Matriculation and Supplemental Examinations, Ordinary Lectures begin.

Saturday, 12th December. Last day for notice to be sent to Secretary of Section of the Bar by candidates at the January Examination for admission to study or to practise Law in the Province of Quebec.

Monday, 4th January, 1897. Lectures, Second Term, begin.

Wednesday, 13th January. Bar Examinations take place at Montreal.

Monday, 1st March. Theses for Degree of B.C.L.

Monday, 26th April. Declaration of results of Examinations.

Friday, 30th April. Convocation for Degrees in Law.

Monday, 7th June. Last day for notice to be sent to Secretary of Section of the Bar by Candidates at the July Examination for admission to study or to practise Law in the Province of Quebec.

Wednesday, 7th July. Bar Examinations take place at Quebec.

## EXAMINATIONS.

The date of the several Examinations will be announced during the session.

## COURSE OF STUDY FOR 1896-97.

*Roman Law :*

History of Roman Law.....

Maine, Ancient Law.....

Institutes of Justinian.....

Gaius, Commentaries.....

*Criminal Law*.....*Commercial Law :*

Negotiable Instruments.....

Bills, Notes, Cheques.....

*Law of Evidence*.....

} Prof. DAVIDSON, Acting DEAN.

*Commercial Law :*

Merchant Shipping..... Professor WURTELE.

*Law of Contracts*.....*Law of Carriers*.....*Legal Bibliography and History*.....*Constitutional Law*.....*Privileges and Hypothecs*.....

} Professor GEOFFRION.

} Professor MCGOUN.

*Civil Law :*

Law of Persons..... Professor FORTIN.

*Civil Law :*

Gifts.....

Wills.....

Substitutions.....

} Professor DOHERTY.

*Commercial Law :*

Law of Sales of Moveable Property..... Professor LAFLEUR.

*Notarial Law :*

Sale (Real Estate).....

Notarial Practice and Conveyancing.....

} Professor MARLER.

*Civil Procedure*..... Lecturer RYAN.



## FACULTY OF LAW—TIME TABLE, 1896-97.

## I. MONDAY, 7th September, to FRIDAY, 9th October, 5 weeks.

| HOURS.            | MONDAY.                            | TUESDAY.                        | WEDNESDAY.                         | THURSDAY.                       | FRIDAY.                            |
|-------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|
| 8.30 to 9.30 a.m. | Procedure.<br>Persons.<br>History. | Evidence.<br>Sales (Moveables). | Procedure.<br>Persons.<br>History. | Evidence.<br>Sales (Moveables). | Procedure.<br>Persons.<br>History. |
| 4 to 5 p.m.       |                                    |                                 |                                    |                                 |                                    |
| 5 to 6 p.m.       |                                    |                                 |                                    |                                 |                                    |

## II. MONDAY, 12th October, to FRIDAY, 13th November, 5 weeks.

|                   |                                               |                                    |                                               |                                    |                                               |
|-------------------|-----------------------------------------------|------------------------------------|-----------------------------------------------|------------------------------------|-----------------------------------------------|
| 8.30 to 9.30 a.m. | Gifts, Wills.<br>Roman.<br>Sales (Moveables). | Procedure.<br>Persons.<br>History. | Gifts, Wills.<br>Roman.<br>Sales (Moveables). | Procedure.<br>Persons.<br>History. | Gifts, Wills.<br>Roman.<br>Sales (Moveables). |
| 4 to 5 p.m.       |                                               |                                    |                                               |                                    |                                               |
| 5 to 6 p.m.       |                                               |                                    |                                               |                                    |                                               |

## III. MONDAY, 16th November, to FRIDAY, 11th December, 4 weeks.

|                   |                                      |                                        |                                      |                                     |                                             |
|-------------------|--------------------------------------|----------------------------------------|--------------------------------------|-------------------------------------|---------------------------------------------|
| 8.30 to 9.30 a.m. | Gifts, Wills.<br>Roman.<br>Carriers. | Procedure.<br>Roman.<br>Constitutional | Gifts, Wills.<br>Roman.<br>Carriers. | Procedure.<br>Roman.<br>Const. Law. | Gifts, Wills.<br>Roman.<br>Carriers (Nov.). |
| 4 to 5 p.m.       |                                      |                                        |                                      |                                     |                                             |
| 5 to 6 p.m.       |                                      |                                        |                                      |                                     |                                             |

## IV. MONDAY, 4th January, to FRIDAY, 5th February, 5 weeks.

|                   |                                               |                                 |                                               |                                 |                                               |
|-------------------|-----------------------------------------------|---------------------------------|-----------------------------------------------|---------------------------------|-----------------------------------------------|
| 8.30 to 9.30 a.m. | Substitutions.<br>Criminal.<br>Priv. and Hyp. | Criminal.<br>Sales Real Estate. | Substitutions.<br>Criminal.<br>Priv. and Hyp. | Criminal.<br>Sales Real Estate. | Substitutions.<br>Criminal.<br>Priv. and Hyp. |
| 4 to 5 p.m.       |                                               |                                 |                                               |                                 |                                               |
| 5 to 6 p.m.       |                                               |                                 |                                               |                                 |                                               |

## V. MONDAY, 8th February, to end of Session FRIDAY, 12th March, 5 weeks.

|                   |                                    |                                                    |                                    |                                                    |                                    |
|-------------------|------------------------------------|----------------------------------------------------|------------------------------------|----------------------------------------------------|------------------------------------|
| 8.30 to 9.30 a.m. | Bills and Notes.<br>Priv. and Hyp. | Substitutions.<br>Bills and Notes.<br>Merch. Ship. | Bills and Notes.<br>Priv. and Hyp. | Substitutions.<br>Bills and Notes.<br>Merch. Ship. | Bills and Notes.<br>Priv. and Hyp. |
| 4 to 5 p.m.       |                                    |                                                    |                                    |                                                    |                                    |
| 5 to 6 p.m.       |                                    |                                                    |                                    |                                                    |                                    |

## APPENDIX.

The attention of intending Students is called to the following provisions of the Revised Statutes of Quebec and amendments, as bearing on the requirements for the study and practice of Law in the Province:—

ARTICLE 3544 R.S.Q.—Examinations for admission to study and to practise law in the Province of Quebec are held at the time and place determined by the General Council.

The places and dates as at present fixed are :

**MONTREAL.....Wednesday, 13th Jan., 1897.**

**QUEBEC.....Wednesday, 7th July, 1897.**

and alternately at Montreal and Quebec every six months, namely—at Montreal on the second Wednesday of each January, and at Quebec on the first Wednesday of each July.

All information concerning these examinations can be obtained from the General Secretary's Office. The present General Secretary is W. C. Langedoc, Esq., Quebec.

ARTICLE 3546.—Candidates must give notice as prescribed by this article, at least one month before the time fixed for the examination, to the Secretary of the Section in which he resides, or in which he has resided for the last six months.

The present Secretary of the Montreal Section is L. E. Bernard, Esq., New York Life Building, Montreal.

ARTICLE 3503a.—Added by Statute of Quebec, 53 Victoria (1890), Cap. 45. provides that Candidates holding the diploma of Bachelor of Arts, Bachelier-es-Lettres, or Bachelier-es-Science from a Canadian or other British University, is dispensed from the examination for admission to study. Such Candidates are required to give the notice mentioned above.

ARTICLE 3548 R.S.Q. (as altered by by-law of the General Council).—On giving the notice prescribed by Article 3540, the Candidate pays the Secretary a fee of \$2, and makes a deposit of \$30 for admission to study, or of \$70 for admission to practice, which deposit, less \$10, is returned in case of his not being admitted.

ARTICLE 3552 (amended 1894, Q. 57 Vic., c. 35).—To be admitted to practice, the Student must be a British subject, and must have studied regularly and without interruption during ordinary office hours, under indentures before a Notary as Clerk, or Student with a practising Advocate, during Four Years, *dating from the registration of the certificate of admission to study.* This term is reduced to Three Years in the case of a student who has followed a regular law course in a University or Collège in this Province, and taken a degree in law therein.

## REQUIREMENTS FOR DEGREE OF DOCTOR OF CIVIL LAW.

ADOPTED OCTOBER, 1881.

Every Candidate for the degree of D.C.L. in Course must be a Bachelor of Civil Law of twelve years' standing, and must pass such examination for the Degree of D.C.L. as shall be prescribed by the Faculty of Law. He shall also, at least two months before proceeding to the Degree, deliver to the Faculty twenty-five printed copies of a Thesis or Treatise of his own composition on some subject, selected or approved by the Faculty, such Thesis to contain not less than fifty octavo pages of printed matter, and to possess such degree of merit as shall, in the opinion of the Faculty, justify them in recommending him for the degree.

The candidate shall also pay to the Secretary of the Faculty, annually during the period of twelve years, for the retention of his name on the books of the Faculty, a fee of two dollars, to form part of the Library Fund of the Faculty. Upon cause shown, however, and with the consent of the Faculty, such fees may be paid at one time before the granting of the degree.

The Examination for the Degree of D.C.L. in Course, which shall be open to all who have taken the degree of B.C.L. of this University in the past, as well as to such as may take the degree in future, shall, until changed, be on the following subjects and authors, with the requirement of special proficiency in some one of the groups below indicated. In the groups other than the one selected by the Candidate for special proficiency, a thorough acquaintance with two works of each group shall be sufficient, including in all cases the work first mentioned in each group and the first two works in group third.

### I. INTERNATIONAL LAW.

Phillimore, International Law.

Hall,

Wharton, Conflict of Laws.

Savigny's International Law, by Guthrie.  
 Fœlix, Droit International Privé.  
 Brocher, Droit International Privé.  
 Dicey on Domicile.  
 Story, Conflict of Laws.  
 Maine, Lectures on International Law.

## 2. ROMAN LAW.

Ortolan's Institutes.  
 Mommsen's History of Rome.  
 Roby's Introduction to the Digest.  
 Muirhead's Roman Law.  
 Mackenzie's Roman Law.  
 Savigny's Roman Law in the Middle Ages.  
 Bryce's Holy Roman Empire.  
 Institutes of Gaius.  
 Fustel de Coulanges, La Cité Antique.

## 3. CONSTITUTIONAL HISTORY AND LAW.

Dicey's Law of the Constitution.  
 Stubbs' Constitutional History of England.  
 Hearn, Government of England.  
 Bagehot, English Constitution.  
 Franqueville, Gouvernement et Parlement Britanniques.  
 Gneist, Constitution of England.  
 Hallam, Constitutional History of England.  
 May, " " "  
 Gardiner, " " "  
 May, Democracy in Europe.  
 Freeman, Growth of the English Constitution.  
 Mill, Representative Government.  
 Bentham, Fragment on Government.  
 Maine, Popular Government.

## 4. CONSTITUTION OF CANADA AND WORKS RELEVANT THERETO.

Todd, Parliamentary Government in the British Colonies.  
 Bourinot, Federal Government in Canada.  
 Doutre, Constitution of Canada.  
 Cartwright, Cases under the British North America Act.  
 Lord Durham's Report on British North America.  
 Lareau, Histoire du Droit Canadien.  
 Houston's Constitutional Documents of Canada.  
 Volume O., Statutes of Lower Canada.  
 Masères' Collection of Quebec Commissions.



Laferrière, Essai sur l'Histoire du Droit Français.  
 Dilke, Problems of Greater Britain.  
 Matthews (Jehu), A Colonist on the Colonial Question.  
 Bryce, American Commonwealth.  
 Curtis, History of the Constitution of the United States.  
 Cooley, Principles of Constitutional Law.

# 5. CRIMINAL LAW, JURISPRUDENCE AND POLITICAL SCIENCE.

Stephens, History of the Criminal Law.  
 Blackstone, Vol. IV.  
 Harris, Principles of Criminal Law.  
 Pike, History of Crime.  
 Holland's Elements of Jurisprudence.  
 Austin, Lectures, omitting chapters on Utilitarianism.  
 Lorimer's Institutes.  
 Amos, Science of Law.  
 Woolsey, Political Science.  
 Lieber, Political Ethics.  
 Freeman, Comparative Politics.  
 Aristotle's Politics, by Jowett.

## Faculty of Comparative Medicine and Veterinary Science.

THE PRINCIPAL (*ex-officio*).

### *Professors :*

D. MCEACHRAN, F.R.C.V.S., V.S. Edin., D.V.S., Dean of the Faculty.  
M. C. BAKER, D.V.S.,  
CHARLES MCEACHRAN, D.V.S., Registrar of the Faculty.

### *Associate Professors :*

|                              |                                     |
|------------------------------|-------------------------------------|
| G. P. GIRDWOOD, M.D.,        | GEO. WILKINS, M.D.,                 |
| D. P. PENHALLOW, B.Sc.,      | WESLEY MILLS, M.A., M.D., D.V.S.,   |
| A. D. BLACKADER, B.A., M.D., | J. G. ADAMI, M.A., M.D., [Cantab.], |

### *Lecturers.*

N. D. GUNN, M.D.,      C. F. MARTIN, B.A., M.D.

### *Examiners :*

The Professors and Associate Professors, together with the following gentlemen nominated by the Provincial Government :—

J. WESLEY GADSDEN, M.R.C.V.S., Philadelphia, Penn.  
J. A. COUTURE, D.V.S., 49 Garden Street, Quebec.  
A. MCCORMICK, D.V.S., Ormstown, P.Q.  
A. W. HARRIS, D.V.S., Ottawa, Ontario.  
JOHN M. PARKER, D.V.S., Haverhill, Mass.  
FRANK MILLER, V.S., Burlington, Vt.

*Matriculation Examiner.*—A. N. SHEWAN, M.A., Lansdowne School, Montreal.

### SESSION 1896-97.

The seventh Session of the Faculty (being the thirty-first of the Montreal Veterinary College) will be opened on Tuesday, 29th September, 1896, by an introductory lecture, at 8 p.m., in the lecture-room of the Faculty, No. 6 Union Avenue. The regular course of lectures will begin on the following day, at the hours named in the time table, and will continue till the end of March. Owing to changes in the hours of lectures and rearrangement of the courses in the Medical College, consequent on the extension of the session

to nine months, the hours of lectures will be announced later, together with any alterations which may be necessary, the course as herein announced being subject to such changes as the Faculty may see fit to make.

The Montreal Veterinary College was inaugurated in 1866.

The complete course of study in this Faculty extends over three years. Graduates of recognized Medical Colleges are allowed to present themselves for examination after regular attendance on one full course; graduates of recognized Agricultural Colleges in which Veterinary Science constitutes a branch of study, after regular attendance for two full courses.

Allowances will be made to students of Human or Comparative Medicine, or others who can produce certified class tickets for attendance on any of the subjects embraced in the curriculum from any recognized college or university.

Graduates and students who avail themselves of the above privileges will nevertheless be required to pass an examination in the subjects comprised in the three years' course, unless, from satisfactory evidence otherwise produced, the examiners consider it to be unnecessary.

Graduates of recognized Veterinary Colleges desirous of taking the degree, may do so by attendance on the final subjects for one full session, but will be required to pass the examinations on all the subjects embraced in the curriculum, botany excepted.

Occasional and agricultural students will be received without matriculation for attendance on any particular series of lectures. Such students will not be examined, nor will they be entitled to receive class certificates except as occasional students, nor will such attendance be accepted should the student subsequently wish to become a regular student of the Faculty.

#### MATRICULATION.

Every student, previous to his admission, must produce a certificate of educational acquirements satisfactory to the Faculty, or submit himself to a matriculation examination in (1) writing, (2) reading aloud, (3) dictation, (4) English grammar and (5) composition, (6) outlines of geography, with special reference to North America, (7) arithmetic, including vulgar and decimal fractions.

NOTE.—It is contemplated to add the rudiments of Latin to the matriculation in the near future.

A. N. Shewan, M.A., will hold the matriculation examination on Saturday, 26th September, 9 a.m., at the College, 6 Union Avenue, when all those intending to enter the course should present themselves for examination. Candidates possessing certificates of education or of previous matriculation should produce them for the inspection and approval of the examiner. Graduates of any Faculty in a recognized University or Agricultural College are not required to matriculate.

No College is recognized unless its students are required to matriculate.

### REGISTRATION AND PAYMENT OF FEES.

The following are the College regulations :—

All students desirous of attending the classes shall, at the commencement of each session, enrol their names and residences in the register of the Faculty, and procure from the Registrar a ticket of registration, for which each student shall pay a fee of \$5.

The said register shall be closed on the last day of October in each year. The fees are payable to the Registrar, and all class tickets will be issued by him, *and must be paid in advance* at the time of registration; the registrar will on no consideration issue tickets till the fees are paid. Intending students must govern themselves accordingly.

All students must register, including those who receive free bursaries.

Fees for the whole course are \$75 per session, and, in all cases, must be paid on entering. Matriculation fee, \$5, which is to be paid prior to the examination; \$5 for registration, and \$5 for re-registration, payable at the beginning of each of the following two Sessions, and \$20 on receiving the diploma. Students who are allowed time for previous study will be required to pay full fees, *i.e.*, \$90 and \$5 for registration each session. Payments must be made in all cases as above.

In addition to the above Faculty fees, every undergraduate must pay a fee of \$2 for maintenance and use of college grounds.

### STUDENTS OF THE PROVINCE OF QUEBEC.

In consideration of the annual grant, the Council of Agriculture has the privilege of sending thirteen pupils, free of expense, to the whole course: such students however pay a fee of \$5 for the course in Botany and \$5 annually for registration. These Bursaries may be obtained by young men resident in the Province of Quebec, by application made to the Dean of the Faculty in the handwriting of applicant, accompanied by a recommendation from the Agricultural Society of the district in which they reside, provided the Council considers them qualified by education and in other respects for entering the College.

In all cases, except when specially arranged, Bursars will be required to give a guarantee that they will attend three Sessions, and failing to do so, they shall be required to pay the fees for the Sessions which they have attended. These Bursaries are not intended for nor will they be given to such students as do not require such aid.



## GENERAL REGULATIONS.

Students of this Faculty will be graded as of the first, the second, and the final year. In each year students will take the studies fixed for that year only, unless by special permission of the Faculty.

Persons desirous of entering as Occasional Students shall apply to the Dean of the Faculty for admission as such, and shall obtain a ticket or tickets for the class or classes they desire to attend.

All Students shall be subject to the following regulations as regards attendance and conduct :—

A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted ; and the said class-book shall be submitted to the Faculty at a meeting to be held between the close of the lectures and the commencement of the examinations ; and the Faculty shall, after examination of such class-book, decide which Students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

Punctual attendance on all the classes proper to his year is required of each Student. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to or from it, Students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the Student, and, if necessary, report him to the Dean.

When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honors, suspend from classes, or report to the Corporation for expulsion.

Any Student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

All cases of discipline involving the interest of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

The College year shall be divided into two terms, the first extending to the Christmas vacation, and the second from the expiration of the Christmas vacation to the 30th March following.

Each lecture shall be of one hour's duration, but the Professors shall have the right to substitute an examination for any such lecture.

At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors and such other examiners as may be appointed by the Corporation. The results shall be reported as early as possible to the Faculty.

The students have all the privileges of the McGill Medical Faculty's Laboratories, which are thus described in their annual calendar :—

## PHYSIOLOGICAL LABORATORY.

The Physiological Laboratory, which is situated on the ground floor, is supplied with the most modern apparatus for the practical teaching of this most important branch of the medical curriculum. It contains, amongst other valuable instruments: kymographs, various manometers, etc., for demonstrating blood pressure; myographs, rheocords, moist chambers, etc., and various electrical appliances for demonstrating experiments in connection with nerve and muscle; special apparatus for illustrating various points in respiration; apparatus specially suitable for demonstrating the processes of digestion, as well as the chemical composition and nature of the secretions, and the chief constituents of the tissues and nutritive fluids. The laboratory is arranged in such a way as to permit of Students assisting at, and taking part in, these demonstrations. During the past session, important additions of apparatus have been made to the Physiological Laboratory.

## CHEMISTRY.

The course in chemistry embraces Chemical Physics, in the first portion of the course, the theory of Chemistry, both inorganic and organic, in the latter part of the course. The Chemical Laboratory, which is available to the Students of Comparative Medicine, is large, lofty and well lighted, and can accommodate comfortably 76 men at one time. Each Student, when entering on his course, has a numbered table in the laboratory assigned to him for his use during the session. Each table has its own gas and water fixtures, and is provided with shelves for its corresponding set of reagent bottles, as well as a drawer and locker containing a modern set of chemical apparatus especially adapted for the work. This apparatus is provided by the Professor of Chemistry, and supplied to each Student without extra charge. The Student is required to pay only for apparatus broken or destroyed.

The laboratory is furnished with a large draught closet for ventilation, sulphuretted hydrogen apparatus, gas and combustion furnaces, etc., giving to the student unsurpassed advantages for acquiring a sound and practical knowledge of medical chemistry.

## PATHOLOGICAL LABORATORY.

In the Pathological Laboratory accommodation will be provided for Students or practitioners who desire to carry on advanced study or private pathological research. The laboratory has been entirely re-built recently, and is well stocked with the usual apparatus for pathological and bacteriological work.

The demonstrations in Morbid Anatomy will be given in a small laboratory, specially arranged for the work. The classes in Pathological Histology will be held in the Pathological Laboratory.

Through the generosity of Mr. J. H. R. Molson, the large house previously occupied by Professor Harrington has been converted into a Pathological Laboratory, having on the upper floor the Class and Demonstration room, capable of

holding practical classes of fifty students. This is fully fitted with microscopes and other apparatus for the purpose of Pathological Histology and Bacteriology. Upon the first floor are the Library and Professor's room, the Preparation and Research rooms, with a smaller Incubator room for Bacteriological use. On the ground floor are situated the animal and store rooms and the apartments of the assistant.

Accommodations will be provided for students or practitioners who desire to carry on advanced study or pathological research.

### HISTOLOGICAL LABORATORY.

The Histological Laboratory is a large, well-lighted room on the second floor. It is so arranged that over eighty students can be present at the microscopical demonstrations. For this purpose it is supplied with thirty-five microscopes, all from the well-known makers, Zeiss, Hartnack and Leitz. From the large number of microscopes employed, students will have special facilities in studying and making themselves thoroughly acquainted with the specimens that are the subjects of demonstration.

### PRACTICAL MICROSCOPY.

This is an entirely optional course, in charge of Prof. Wilkins, assisted by Dr. Gunn. It is intended especially for teaching the technique of Microscopy. Students will be shown how to examine blood, etc., also to cut, stain, and mount specimens. For this purpose, they will have furnished them normal structures, with which they will be able to secure a cabinet of at least 100 specimens, which will be of great benefit when in practice. Reagents and everything, except cover glasses and cabinet cases, provided. Fee, \$8.

## COURSES OF LECTURES.

### BOTANY.

D. P. PENHALLOW, M.A.Sc.

The course in Botany is designed to give Students a thorough grounding in the general morphology of plants and ability to determine species. It includes a practical study of the Spermatophytes and Pteridophytes during the first half of the session, and after Christmas a Course of lectures on general Morphology, together with a special discussion of plants possessing poisonous properties, and therefore liable to produce injury to grazing animals.

The Morphological Laboratory is well equipped with efficient dissecting microscopes, while the Botanic Garden and Herbarium afford an ample supply of fresh and dried material.

## ZOOLOGY.\*

W. E. DEEKS, B.A., M.D., LECTURER.

This course includes a systematic study of the classification of animals, illustrated by Canadian examples, and by the collections in the Peter Redpath Museum. It affords suitable preparation for collecting in any department of Canadian Zoology or Palaeontology, and as an introduction to Comparative Physiology.

Students in Botany or Zoology will receive tickets to the Peter Redpath Museum, and to the Museum of the Natural History Society of Montreal.

It is optional with students to select either the course on Botany or on Zoology.

## CHEMISTRY.

GILBERT P. GIRDWOOD, M.D.

Inorganic Chemistry is fully treated ; a large portion of the course is devoted to Organic Chemistry and its relations to Medicine. The branches of Physics bearing upon or connected with Chemistry\*also engage the attention of the Class. For experimental illustration, abundant apparatus is possessed by the College.

The Chemical Laboratory will be open to members of the Class to repeat experiments performed during the course, under the superintendence of the Professor or his Assistant.

## PHYSIOLOGY.

T. WESLEY MILLS, M.A., M.D.

The purpose of this Course is to make students thoroughly acquainted, so far as time permits, with modern Physiology, its methods, its deductions, and the basis on which the latter rest. Accordingly, a full course of lectures is given, in which both the Physical and the Chemical departments of the subject receive attention.

In addition to the use of diagrams, plates, models, etc., every department of the subjects is experimentally illustrated. The experiments are free from elaborate *technique*, and many of them are of a kind susceptible of ready imitation by the student.

Laboratory work for Senior Students :—

(1) During a part of the Session there will be a course on Physiological Chemistry, in which the student will, under direction, investigate food-stuffs, digestive action, blood, and the more important secretions and excretions, including urine. All the apparatus and material for this course will be provided.

(2) The remainder of the Session will be devoted to the performance of such experiments as are unsuitable for demonstration to a large class in the lecture room and such as require the use of elaborate methods, apparatus, etc. The

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\*Students may either take Botany or Zoology, but must intimate at the beginning of the Session their choice and adhere to this, except by special permission of the Faculty. Students desiring to attend both subjects in one session may do so by permission of the Faculty.



course for first year students is similar to that for senior students, though less advanced, and more attention will be given to the anatomico-physiological aspects of the subject than to the chemical.

## HISTOLOGY.

GEO. WILKINS, M.D.

This will consist of a course of ten lectures and twenty-five weekly demonstrations with the microscope. As the demonstrations will be chiefly relied upon for teaching the Microscopic Anatomy of the various structures, the specimens under observation will then be minutely described. Plates and diagrams specially prepared for these lectures will be freely made use of.

## COMPARATIVE PATHOLOGY.

J. G. ADAMI, M.D., Professor.

C. F. MARTIN, M.D., Lecturer.

The teaching in Pathology at McGill Medical College includes courses in general and special Pathology, in Bacteriology (held during the summer Session), and instruction in the performance of Autopsies. These courses—while directed especially towards giving to the Students a due knowledge of the causation and course of disease in man—are necessarily based largely upon the results of observations upon the lower animals, and the greater part of all these causes is applicable equally to conditions obtaining in the domestic animals. There is in addition a practical course of Pathological Histology for Students of Comparative Medicine, and instruction is given upon the performance of Autopsies upon the lower animals.\*

## MEDICINE AND SURGERY.

D. McEACHRAN, F.R.C.V.S.

Students of all years must attend.

The course embraces the principles and practice of Veterinary Medicine, including the diseases of domestic animals, their nature, causes, symptoms, and treatment. It necessarily includes Pathology and Pathological Anatomy, with daily clinical demonstrations in the hospital and the yard practice of the College, as well as illustrations from plates, preserved specimens, and fresh material furnished by the Pathologist.

The course on Surgery embraces Surgical Anatomy and Practices of Surgery, and will be illustrated by a large collection of surgical appliances.

The large and varied practice of the College furnishes abundance of cases for demonstration purposes. Attendance and practical work in the Pharmacy and Hospital is compulsory during the entire course, in the order arranged at the beginning of each Session, and forms an important part of qualifications for graduation.

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\*Undergraduates in the second and third sessions are particularly recommended to take the practical course in Bacteriology during the summer session, if possible.

## ANATOMY.

M. C. BAKER, D.V.S.

In this course the Anatomy of the horse is the subject of special study, while the structural differences of all the domestic animals are carefully explained and illustrated by fresh subjects. There is a very large collection of anatomical models by Dr. Auzoux, of Paris, natural injections and dissections, and a most complete collection of diagrams, including Marshall's complete set, Mons. Achille Compté's Anatomical and Zoological series, also a large collection of drawings specially prepared for the school by Mr. Scott Leighton, artist, Boston, and Mr. Hawkset, Montreal.

The dissecting room is open at all hours, subjects are easily procured, and either the Professor or Demonstrator will be in attendance to superintend and direct students in practical dissection. The room is furnished with every convenience, is thoroughly lighted, and affords students all that can be reasonably desired.

Students are required to pay for the material necessary for practical anatomy.

Before a student can be allowed to present himself for his pass examination, he must produce tickets certified by the demonstrator that he has dissected two entire subjects, that is, one each session.

## MATERIA MEDICA AND THERAPEUTICS.

A. D. BLACKADER, M.D., Professor.

NEIL GUNN, M.D., Lecturer.

This course comprises a description of the physiological and therapeutic action of all the more important medicines used in Veterinary Practice, with a short reference to their general properties and principal preparations. It will also include a course in the practical work of compounding and administering medicines in the pharmacy and hospital. There will also be experimental demonstrations of the action of some of the more important drugs on animals.

## CATTLE PATHOLOGY AND OBSTETRICS..

C. McEACHRAN, D.V.S.

A special course on Cattle Diseases and Veterinary Obstetrics will be delivered, embracing the history of Cattle Plagues: their nature, symptoms, pathological anatomy, prophylactic and therapeutic treatment; breeding and general management of breeding animals, disease incident to gestation and parturition, etc.

## SPECIAL COURSE ON DOGS.

Professor Wesley Mills will give a special course on Dogs, which will include:—

(1.) Lectures on the physical and psychic characteristics of all the leading varieties, illustrated by specimens from his own kennels and other sources, as well as by plates, etc.

- (2.) The principles of training ; the feeding and general management of dogs.
- (3.) The principles of breeding ; the management of brood bitches and the rearing of puppies.
- (4.) Bench show management and the public judging of dogs.
- (5.) The rights and duties of dog owners.

In all the above courses the clinical and pathological aspects of the subjects will be considered, as well as the normal.

### THE MUSEUM

Contains a large collection of natural and artificial specimens, consisting of skeletons of almost all the domestic animals, numerous specimens of diseased bones, preparations by Dr. Auzoux of all the different organs in the body, natural dissections, colored models, diagrams, etc., etc., all of which are used in illustrating the lectures, and to which the Students have frequent opportunities of referring. Students will also enjoy the privileges of the Museum of the Medical Faculty of McGill University, which is rich in pathological specimens.

### THE PHARMACY.

All the medicines used in the practice of the College are compounded by the Students, under the direction of the Professors, from prescriptions for each particular case, and most of them are administered or applied by them. For this purpose they are detailed for certain pharmaceutical duties alternately. By this means they become familiar with the physical properties, compatibilities, doses and uses of the medicines, and become expert in administering them to the different patients brought for treatment. Attendance and practical work in the Pharmacy are compulsory.

### THE PRACTICE.

The Hospital and Daily Clinics, as well as a very extensive out-door practice, including most of the largest stables in the city and numerous farms in the vicinity, afford excellent opportunities for clinical observation on horses of all breeds and ages. Owing to the numbers of cattle kept in the city, and the valuable thoroughbred herds in the neighborhood, advanced Students are enabled to see and do considerable cattle practice. The dog practice is the largest in Canada. All canine diseases can be studied clinically, owing to the large number of dogs brought to the College for medical or surgical treatment.

Senior Students will be appointed to act alternately as dressers in the Hospital, and first and second year men must assist in administering medicines and at operations.

### \*TEXT BOOKS.

The following text books are recommended :—  
*Anatomy*.—Chauveau's Comparative Anatomy ; Strangeway's Veterinary Anatomy ; McFadyean's Veterinary Anatomy.

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\*Students are advised not to buy text-books extensively till after consultation with the Professor who teaches the subject.

*Physiology*.—Physiology for Beginners by Foster and Shore ; Prof. Mills' Text Book of Comparative Physiology ; Class Laboratory Exercises by the same author.

*Histology*.—Klein's Elements ; Schafer's Essentials of Histology.

*Botany*.—Gray's Structural Botany ; Bessey's Botany.

*Zoology*.—Dawson's.

*Chemistry*.—Wurtz's Elementary Chemistry ; Armstrong ; Remsen's Organic Chemistry.

*Medicine and Surgery*.—Williams' Principles and Practice of Veterinary Medicine ; Fleming's Sanitary Science and Police ; Williams' Surgery ; Fleming's Operative Surgery ; Robertson's Equine Medicine ; Liautard's Operative Veterinary Surgery ; Zuill's Translation of Friedberger and Fröhner's Pathology, etc.

*Materia Medica*.—Dun's Veterinary Medicines ; Walley's Veterinary Conspectus ; Tuson's Pharmacy ; Hoare's Therapeutics.

*Cattle Diseases*.—Steel's Bovine Pathology ; Clatter's Cattle Doctor (Armitage) ; Fleming's Veterinary Obstetrics.

*Canine Diseases*.—Prof. Mills' The Dog in Health and in Disease.

*Entozoa*.—Cobbold's Entozoa of Domestic Animals.

*Pathology*.—Payne's Pathology ; Fraenkel's Bacteriology.

## BOARD AND TRAVELLING EXPENSES.

Board can be obtained at from \$15 to \$20 per month.

For notice of McGill Students' Club, see " University Societies."

By the kindness of the Railway Companies, certified students of the College will be granted return tickets from Montreal to any part of their lines at greatly reduced rates, the said tickets to hold good from the close of one session to the beginning of the next.

Return tickets will also be granted for the Christmas vacation.

## VETERINARY MEDICAL ASSOCIATION.

This Association is for the mutual improvement of its members in all matters pertaining to the profession.

Graduates and students of Veterinary Medicine and graduates and students of Human Medicine are eligible to membership.

The meetings are held fortnightly, at which papers are read and discussed, cases reported, etc.

The advantages which students derive from these meetings are very great. Not only do they hear carefully prepared papers on subjects of professional importance, but an opportunity is afforded for practising public speaking, which in after-life is often extremely useful. The fees of the Association are expended in the purchase of books for the Library, drugs for experimental purposes and the prizes awarded for papers read.



The Library is owned by the Association, and is under the control of officers who are elected annually. It contains nearly 600 volumes, embracing works of great antiquity, as well as the modern works on Veterinary Science and collateral subjects, in both the English and French languages, all of which are available for consultation and study by members.

Every student is expected to become a member. The entrance fee is \$5, and the yearly subscription \$2.50. A Diploma of Honorary Fellowship is conferred on all members who have complied with the regulations of the Association.

## ASSOCIATION FOR THE STUDY OF COMPARATIVE PSYCHOLOGY.

This Society is similar in constitution to the Veterinary Medical Association, and has special library of about 100 volumes. Its object is the study of the Psychic Phenomena (intelligence, etc.) of all classes of animals, and the diffusion of sounder views on this subject. Naturally, it is of great importance in the practice of medicine upon dumb animals, as well as of peculiar scientific interest.

## DONATIONS.

John Wesley Gadsden, M.R.C.V.S., of Philadelphia, Penn., U.S.A., has generously donated to this Faculty his valuable library of nearly 400 volumes and the specimens of his private museum, many of which are of unusual value.

## QUALIFICATIONS FOR THE DEGREE.

Candidates for the Final Examination shall furnish testimonials of attendance on lectures on the following subjects:—

Either Botany or Zoology—One course of six months, 1st year.

Histology,  
Chemistry,  
Physiology, } Two courses of six months, 1st and 2nd years.  
Anatomy, }

General Pathology and Demonstrations, one course of six months.

Cattle Diseases and Obstetrics,  
Practice of Medicine and Surgery, } Two courses, 2nd and 3rd years.  
Materia Medica and Therapeutics. }

No one will be permitted to become a candidate for examination who shall not have attended at least one full course of lectures in this faculty, including all the subjects embraced in the curriculum. Courses of less length than the above will be received only for the time over which they have extended.

Students, except by special permission of the Faculty, must pursue the subjects of Anatomy, Physiology, Chemistry, Histology and Botany or Zoology in their first session.

Candidates of the 1st and 2nd years, who fail to pass in not more than two subjects may be granted a supplemental examination at the beginning of the following session. Supplemental examinations will not be granted, except by

special permission of the Faculty and on written application stating reasons, and on payment of a fee of \$2, which must be paid prior to examination.

Candidates who fail to pass in a subject of which two courses are required, may, at the discretion of the Faculty, be required to attend a third course, and furnish a certificate of attendance thereon.

In addition to the written and oral examinations, candidates must pass a practical clinical test, including examination of horses for soundness, written reports being required; the clinical reports to include diagnosis, prognosis, and treatment.

The following oath or affirmation will be exacted from the candidate before receiving the degree:—

#### DECLARATION OF GRADUATES IN COMPARATIVE MEDICINE AND VETERINARY SCIENCE.

I, ———, promise and solemnly declare that I will, with my best endeavors, be careful to maintain the interests of this University, and that, to the best of my ability, I will promote its honor and dignity.

#### EXAMINATIONS.

First Year.—Pass Examinations in Botany or Zoology, Histology (oral), 1st Chemistry, Anatomy, Physiology, and on all other subjects in the course of this year.

Second Year.—Pass Examinations in Chemistry, Physiology, Histology (written) and Anatomy, in addition to sessional examinations in these and the other subjects of the year.

Third Year.—Pass Examinations in Practice of Medicine and Surgery, General and Special Pathology, Veterinary Obstetrics, Diseases of Cattle and Materia Medica and Therapeutics.

N.B.—Written Oral Examinations will be held from time to time during the session, and attendance at these is compulsory. The standing attained at these examinations will be taken into account at pass examinations.

#### AGE FOR GRADUATION.

Students under seventeen will be received as apprentices, but cannot be entered as regular Students before attaining that age.

Minors may pass the Examinations, but cannot receive the Diploma until they are twenty-one years of age.

#### REGULATIONS GOVERNING THE CONFERRING OF THE DEGREE UPON FORMER GRADUATES OF THE MONTREAL VETERINARY COLLEGE.

The Degree of Doctor of Veterinary Science may be conferred on former graduates of Montreal Veterinary College at any Convocation of McGill University held for conferring degrees, subject to the following regulations, which were adopted at a meeting of the Corporation of McGill University, held on the 22nd January, 1890, governing the conferring of Degrees on former graduates:

1st.—That the candidate must be found to have conducted himself throughout his professional career with honor and integrity.

2nd.—That he has not been connected with the manufacture or sale of proprietary medicines.

3rd.—That he has been engaged in actual practice for at least one year since graduating, or that he has been engaged in professional study at some European school.

4th.—That he shall be required to satisfy the Board that he has made reasonable progress in professional knowledge and skill.

In estimating the fitness of a candidate for a degree, account will be taken specially of work done in professional teaching, original research, publication of books or contributions to the journals of the profession.

The fee for the Diploma shall be Twenty Dollars.

An affirmation shall be administered similar to that of other Faculties, and in English.

The Degree may be conferred on absentees.

The regulations relating to fees and affirmations shall apply to ordinary undergraduates on taking the degree.

Graduates intending to apply for the Degree of D.V.S. should notify the Registrar of the Faculty at their earliest convenience, and at the same time state the grounds explicitly on which they base their claims for the Degree.

### HINTS TO STUDENTS.

The Matriculation Examination which you have to undergo is by no means a severe one, and if you are not prepared to pass it you should begin at once to improve your education.

You had better not commence professional reading till you have become familiar with the fundamental subjects. Practice, unless under the guidance of a thoroughly educated practitioner, is more likely to mislead than aid you.

It is advisable that you should arrive in Montreal before the opening day, in order to procure suitable lodgings. Endeavor by all means to be present at the introductory lectures on all subjects; you cannot miss one lecture without thereby losing valuable preparatory information. Come prepared to procure at once the necessary text books and note books. Make your arrangements so as to enable you to devote your entire time and undivided attention to your studies, as the three sessions which the curriculum covers will be found none too long to accomplish the necessary proficiency in the various branches of study required of you. The McGill Y. M. C. A. and the McGill Students' Club are especially recommended to you.

### NOTICE TO GRADUATES.

For the purpose of increasing pathological material for the classes, graduates are earnestly requested to send any interesting or obscure pathological specimens which may be met with in their practice to the Pathological Laboratory, McGill

Medical College. The specimens may be sent C.O.D. by express, and will in all cases be acknowledged. It is suggested that where reports are desired those reports can be satisfactory only when the material arrives in the freshest possible condition. It is urged, therefore, that when forwarded in bottles the tissues be placed immediately either in alcohol, fifty to seventy-five per cent., or in a mixture of equal parts of glycerine and water to which five per cent. of pure carbolic acid has been added. If dry carriage be preferred the method of surrounding the tissues with a cloth well moistened with one in one thousand corrosive sublimate solution, and wrapping this securely in oiled silk is recommended. A report upon the nature of the specimen will be sent if desired, and the specimens, when of sufficient interest, will be preserved in the Museum with the names of the donors affixed.

### STUDENTS' MEETINGS.

The use of the lecture room or other rooms of the College, for holding students' meetings, can be obtained by application to the Dean, stating the object of the meeting, and he may attend personally or appoint someone to represent the Faculty at said meeting. It is strictly forbidden to hold meetings for the discussion of any subject not approved by the Faculty, and students holding such meetings except as above will be dealt with by the Faculty as it may see fit.

## ORDER OF LECTURES.

|                    | MONDAY.                                   | TUESDAY.                                  | WEDNESDAY.                                | THURSDAY.                                 | FRIDAY.                                          | SATURDAY.                                   |
|--------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|--------------------------------------------------|---------------------------------------------|
| 8 to 9 a.m.        | Anatomy.                                  | Anatomy.                                  | Anatomy.                                  | Anatomy.                                  | Anatomy.                                         | Practical Anatomy.                          |
| 9 to 10 a.m.       | Practice of Medicine and Surgery.         | Practice of Medicine and Surgery.         | Practice of Medicine and Surgery.         | Practice of Medicine and Surgery.         | Practice of Medicine and Surgery.                | Clinical Surgery.                           |
| 10 to 11 a.m.      | Cattle Pathology. 2nd and 3rd Year.       | Pathology. 2nd and 3rd Year.              | Cattle Pathology. 2nd and 3rd Year.       | Pathology. 3rd Year.                      | Pathology. 2nd and 3rd Year.                     | Pathological Demonstration.                 |
| 11 a.m. to 12 a.m. | Practical Pharmacy and Hospital Practice. | Practical Pharmacy and Hospital Practice. | Practical Pharmacy and Hospital Practice. | Practical Pharmacy and Hospital Practice. | Practical Pharmacy and Hospital Practice.        | Botany Demonstration. Practical Physiology. |
| 1 to 2 p.m.        | Physiology. 2nd Year.                     | Physiology. 2nd Year.                     | Physiology. 2nd Year.                     | Physiology. 2nd Year.                     | Physiology. Demonstration. 1st and 2nd year men. | Histological Demonstration.                 |
| 2 to 3 p.m.        | * Materia Medica                          | Botany.                                   | *Materia Medica.                          | Botany.                                   |                                                  |                                             |
| 3 to 4 p.m.        | Physiology. 1st Year.                     | Physiology. 1st Year.                     | Physiology. 1st Year.                     | Physiology. 1st Year.                     | Histology.                                       |                                             |
| 4 to 5 p.m.        | Chemistry.                                | Chemistry. † Materia Medica 5 to 6        | Chemistry.                                | Chemistry. †Materia Medica 5 to 6.        | Chemistry.                                       | Examination of Horses for Soundness.        |
| 8 to 10 p.m.       | Practical Anatomy.                        | Practical Anatomy.                        | Practical Anatomy.                        | Practical Anatomy.                        | Practical Anatomy.                               |                                             |

\* Union Avenue, † McGill,



# McGill Normal School.

The McGill Normal School, in the city of Montreal, is established chiefly for the purpose of training teachers for the Protestant population, or for all religious denominations of the province of Quebec, other than the Roman Catholic. The studies in this school are carried on chiefly in English, but French is also taught.

## GOVERNMENT OF THE SCHOOL.

The Corporation of McGill University is associated with the Superintendent of Public Instruction in the direction of the McGill Normal School, under the regulations of the Protestant Committee of the Council of Public Instruction, and it is authorized to appoint a standing committee consisting of five members, called "The Normal School Committee," which shall have the general supervision of the affairs of the Normal School. The following members of the Corporation of the University constitute the committee of the Normal School for the Session of 1896-97.

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## NORMAL SCHOOL COMMITTEE.

PROF. WM. PETERSON, M.A., LL.D., Principal of the University, *Chairman*.

MR. SAMUEL FINLEY, }  
MR. GEORGE HAGUE, } Governors of McGill College.

J. R. DOUGALL, M.A., }  
REV. PRINCIPAL MACVICAR, D.D., LL.D., } Fellows of McGill  
University.

J. W. BRAKENRIDGE, B.C.L., *Acting Secretary*.

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## OFFICERS OF INSTRUCTION.

### McGILL NORMAL SCHOOL.

SAMPSON PAUL ROBINS, M.A., LL.D., *Principal and Ordinary Professor of Mathematics, and Lecturer on Art of Teaching.*

ABNER W. KNEELAND, M.A., *Ordinary Professor of English Language and Literature.*

MADAME SOPHIE CORNU, *Professor of French.*

MISS GREEN, *Professor of Drawing.*

MR. R. J. FOWLER, *Instructor in Music.*

MISS LILIAN B. ROBINS, B.A., *Assistant to the Principal, and Instructor in Classics.*

MR. W. H. SMITH, *Instructor in Tonic Sol-Fa.*

MR. JNO. P. STEPHEN, *Instructor in Elocution.*

PROF. D. P. PENHALLOW, Ma.Sc., *Lecturer on Botany.*

T. D. REED, M.D., C.M., *Lecturer on Physiology and Hygiene.*

NEVIL N. EVANS, M.A., Sc., *Lecturer on Chemistry.*

BANNEL SAWYER, B.C.L., *Instructor in Penmanship and Book keeping.*

#### MODEL SCHOOLS OF THE MCGILL NORMAL SCHOOL.

ORRIN REXFORD, B.A.Sc., *Head Master of Boys' School.*

MISS MARY J. PEEBLES. *Head Mistress of Girls' School.*

MISS LUCY H. DERICK, *Head Mistress of Primary School.*

#### ANNOUNCEMENT FOR THE SESSION 1896-97.

This Institution is intended to give a thorough training to teachers, by instruction and training in the Normal School itself and by practice in the Model Schools ; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

The forty-first session of this School will commence on the first of September, 1896, and close on the thirty-first of May, 1897. The complete course of study extends over four years, and the Students are graded as follows :—

- 1.—*Elementary School Class.*—Studying for the Elementary School Diploma.
- 2.—*Model School Class.*—Studying for the Model School Diploma.
- 3.—*Academy Class.*—Studying for the Academy Diploma.

All the following regulations and privileges apply to male and female students alike.

#### I. TERMS OF ADMISSION.

(*Extracted from the Regulations of the Protestant Committee of the Council of Public Instruction.*)

Any British subject who produces a certificate of good moral character from the minister of the congregation to which he belongs, and evidence to show that he has completed the sixteenth year of

his age, may be admitted to examination for entrance into the Elementary School Class, or, if he has completed his seventeenth year, to the entrance examinations of the Model School Class. (*See Note a.*)

Previous to admission to the Elementary School Class, every pupil-teacher shall undergo an examination as to his sufficient knowledge of reading, writing, the rudiments of grammar in his own language, geography and arithmetic ; before admission to the Model School Class, he must give proof of his knowledge of the subjects of the previous year. Except as stated below, the examination shall take place before the Principal, or before such other person as he may specially appoint for the purpose. (*See Note b.*)

All candidates who present certificates of having passed in Grade III. Model School Course, and all holders of Elementary School diplomas, shall be exempt from examination for admission to the Elementary School Class. All candidates who show that they have passed at the A.A. examination, taking two-thirds of the aggregate marks and having passed in French, and all holders of Model School Diplomas, shall be exempt from examination for admission to the Model School Class. Holders of Elementary School diplomas, desiring admission to the Model School Class, shall be examined in Algebra, Geometry and French only.

Candidates shall be admitted to examination for entrance only at the times regularly appointed by the Principal of the school at the beginning of the session. Candidates exempt from examination can only be admitted during the first week of the session, except that teachers who may be actually engaged in teaching at the commencement of the session may, at the discretion of the Principal, be admitted to the Elementary School Class not later than the close of the Christmas vacation. No teacher-in-training admitted later than the first of October shall share in that part of the bursary fund which is distributed at Christmas.

In exceptional cases, the Principal of the Normal School may admit to the classes on trial persons whose qualifications may be insufficient for entrance. Such persons may be excluded from the School by the Principal, whenever he may judge it best so to do ; but none shall be permitted to enter or to remain on trial after the semi-sessional examinations.

No candidate is admitted to the Normal School until the provisions of the school laws respecting admission have been fulfilled. (*See Note c.*)

## II. PRIVILEGES OF TEACHERS-IN-TRAINING.

All teachers-in-training are entitled to free tuition.

At the close of the semi-sessional examinations, the sum of \$400 from the bursary fund will be divided among the forty most successful pupils who do not reside at home with their parents or guardians during their attendance at the school. Similarly, the sum of \$800 will be divided at the close of the sessional examinations. The remainder of the bursary fund will be divided as an allowance for travelling expenses among teachers-in-training residing in the Province of Quebec, at a distance of more than ninety miles from Montreal, in a proportion determined by the excess of distance above ninety miles, it being provided that no allowance for travelling expenses shall exceed ten dollars.

All teachers in-training who pass the semi-sessional examinations in the Normal School with 60 per cent. of the total marks, and who have not fallen below 50 per cent. in any one of the groups of subjects, English, Mathematics, French and Miscellaneous, nor in any one of the subjects required by the Syllabus of Examination prescribed for diplomas of the grade to which they aspire, shall be entitled to continue in their classes after Christmas. Except by the special permission of the Principal, none other shall be entitled to this privilege nor to a share in the Christmas bursary.

All teachers-in-training, who attain the standards defined above, at the final examinations of the Normal School, shall be entitled to diplomas of the grade of the class to which they belong, and except with the concurrence of the Principal of the school and the professor of each subject in which there has been failure, none others shall receive diplomas or share in the bursary fund.

All holders of Elementary School diplomas obtained by reaching the standards defined above, shall be entitled to admission to the Model School Class, none others without the special permission of the Principal. Such holders of Elementary School diplomas as have taken not less than 75 per cent. of the total marks, nor less than 60 per cent. of those in any subject essential to the diploma,



according to the Syllabus of Examination of the Protestant Committee of the Council of Public Instruction, shall be entitled to admission among the "selected students" mentioned in the following paragraph, but others may be so admitted by the Principal. (*See Note d.*)

### III. STUDENTS FOR THE ACADEMY DIPLOMA.

The Academy Class in the Normal School being now instructed in the Universities, Academy Diplomas in course are no longer given by the McGill Normal School, but, under the regulations cited below, Academy Diplomas are granted to holders of Model School Diplomas from the Normal School, who become undergraduates of the Universities.

1. The Normal School shall bring up selected students at the end of the Model School year, to the examinations for the entrance into the first year of the Faculty of Arts in the Universities. They may be examined either at the examinations for the Associate in Arts in June, or at those for the matriculation in the autumn, and shall take the full course of study in the first and second years.

2. Such students shall be enrolled in the Normal School as students of the Academy Class, and shall be under the usual pledge to teach for three years. They shall engage in the practice of teaching at such times and in such schools as may be arranged by the Principal from time to time, in consistence with their college work, and shall be under the Principal and the regulations of the Normal School.

3. On report of the colleges which such students may be attending, that they have passed creditably in the Christmas and sessional examinations respectively, they shall be entitled to bursaries, not exceeding thirty dollars per session, in aid of fees and board. Such bursaries may be paid by the Normal School Committee out of any fund available for the purpose.

4. On passing the intermediate, or equivalent, examinations of the Universities, such students will be entitled to receive Academy Diplomas, in accordance with the regulations of the Protestant Committee of the Council of Public Instruction for such diplomas.

5. Such students may, with the advice of the Principal, attend classes at McGill or its affiliated colleges, or at Bishop's College,



and the Normal School Committee shall make such arrangements as may be possible for free tuition at such colleges.

6. It shall be competent to the Principal of the Normal School to provide any tutorial assistance that may in his judgment be necessary for Academy students. Also, it shall be his duty in the case of optional studies to select for the students those required for the curriculum of the Normal School.

7. It shall be competent for students who have taken Academy Diplomas as above, to continue for two years longer at the University, or to return thereto, after teaching for a time, in order to take the degree of Bachelor of Arts; but they shall be held bound to fulfil their engagements to teach, and they shall not be entitled to bursaries. (*See Note e.*)

Holders of Model School Diplomas of the McGill Normal School who are certified by the Principal of the Normal School to have taken 75 per cent. of the total marks at their final examinations, with not less than 60 per cent. of the marks in Mathematics, French, Latin and Greek, respectively, will be admitted without further examination to the first year in Arts of the McGill University; but all such students must make good their standing in the University at the Christmas examinations.

Teachers-in-training, who do not attain the standard defined above, must, in order to enter the University, pass the usual examination for Matriculation.

Exemption from the payment of fees in McGill College for the first year will be granted to the three holders of Model School Diplomas, not being resident in Montreal, who, of all those entering the University on the conditions stated above, have gained the highest aggregate of marks at their final examinations in the Normal School, as certified by the Principal of the Normal School.

Exemption from fees in the second year will be granted to the three students entering from the Normal School, who, with creditable standing in all their examinations at the close of the first year in Arts, have taken the highest aggregate of marks of any Normal School Students in their year.\*

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\*These exemptions will be granted in September 1896 under the regulations above specified. In accordance with a recent resolution of the Board of Governors, they will not be granted in subsequent years.

## IV. CONDITIONS OF CONTINUANCE IN THE NORMAL SCHOOL.

Teachers-in-training guilty of drunkenness, of frequenting taverns, of entering disorderly houses or gambling houses, keeping company with disorderly persons, or committing any act of immorality or insubordination, shall be expelled.

Each professor shall have the power of excluding from his lectures any student who may be inattentive to his studies, or guilty of any minor infraction of the regulations, until the matter can be reported to the Principal. (*See note c.*)

## V. ATTENDANCE ON RELIGIOUS INSTRUCTION.

Teachers-in-training will be required to state with what religious denomination they are connected ; and a list of the students connected with each denomination shall be furnished to one of the ministers of such denomination resident in Montreal, with the request that he will meet weekly with that portion of the teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

In addition to punctual attendance at weekly religious instruction, each student will be required to attend public worship at his own church, at least once every Sunday.

## VI. BOARDING HOUSES.

1. The teachers-in-training shall state the place of their residence, and those who cannot reside with their parents will be permitted to live in boarding houses, but in such only as shall be specially approved of. No boarding houses having permission to board male teachers-in-training, will be permitted to receive female teachers-in-training as boarders, and vice versa. (*See Note g.*)

2. They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

3. They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

4. A copy of the regulations shall be sent to all keepers of lodging houses at the beginning of the session.

5. In case of lodgings being chosen by parents or guardians, a

written statement of the parent or guardian shall be presented to the Principal.

6. All intended changes of lodgings shall be made known beforehand to the Principal or to one of the professors.

7. Boarding houses shall be visited monthly by a committee of professors.

8. Special visitations shall be made in case of sickness being reported, either by professors or by ladies connected with the school; and, if necessary, medical attendance shall be procured.

9. Students and lodging house keepers are required to report, as soon as possible, all cases of serious illness and all infractions of rules touching boarding houses.

#### VII. ACADEMY DIPLOMAS TO GRADUATES.

*Granted under the Regulations of the Protestant Committee of the Council of Public Instruction.*

Graduates in Arts from any British or Canadian University, who have passed in Latin, Greek and French in the Degree Examinations, or who have taken at least second class standing in these subjects at their intermediate Examinations, shall be entitled to receive first class Academy Diplomas, provided that they have also taken a regular course in the Art of Teaching at the McGill Normal School, or other public training institution outside the Province, approved by the Protestant Committee.

Graduates who have not passed in French, as prescribed above, may, on application, be examined in that subject before the Principal of the McGill Normal School, and, if satisfactory, such examination shall be accepted in lieu of the prescribed standing in French in the University examinations.

To meet the requirements of Graduates and Undergraduates in Arts, who, not having previously taken a Normal School course, desire to receive Academy diplomas of the first class under regulation 54, provision has been made for the delivery of a course of forty lectures on Pedagogy in the Normal School and for practice in teaching in the McGill Model School for forty half days, open to Graduates in Arts of any British or Canadian University, to undergraduates of the third year, and with the permission of the Faculty and the concurrence of the Principal of the Normal School, to those of the fourth year.

Undergraduates will be permitted to teach the forty half days referred to above, at times extending over the sessions of the Model School, corresponding to the third and fourth years of their college course. Graduates will be permitted to teach in the Model Schools at such times as may be agreed on with the Principal.

All persons taking this course of study in the Normal School shall be held to be subject to the regulations of the said school, and to be under the supervision of its Principal while in attendance thereat.

Graduates who have taken the above course of study in Pedagogy, and the first class Academy Diploma, may be entered, if so desired by them, in the published lists of the University as holders of such diplomas.

Undergraduates who hold Model School Diplomas in course from the McGill Normal School, who take at least second class standing in Latin and Greek in the Intermediate Examination of the Universities, shall be entitled to receive first class Academy Diplomas.

Any candidate who presents to the Principal of the McGill Normal School, (a) the requisite certificates of age and of good moral character, according to Form No. 1, below, and (b) satisfactory certificates that he has complied with either of the foregoing regulations, shall be recommended by him to the Superintendent of Public Instruction for an Academy Diploma.

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#### FORM OF CERTIFICATE OF CHARACTER TO BE SUBMITTED BY CANDIDATES FOR ACADEMY DIPLOMAS.

"This is to certify that I, the undersigned, have personally known and had opportunity of observing ..... for the ..... last past; that during all such time *his* life and conduct have been without reproach; and I affirm that I believe *him* to be an upright, conscientious, and strictly sober man.

*This certificate must be signed by the Minister of the Congregation to which the Candidate belongs, and by two School Commissioners, Trustees or Visitors.*

#### VIII. NOTES ON THE PRECEDING REGULATIONS.

*Chiefly extracted from the By-Laws of the McGill Normal School.*

(a) On application to the Principal of the School, candidates for admission will be furnished with forms of application, containing the required forms of certificate of good character and of agreement to teach for three years in some Public School in the Province of Quebec.



(b) Teachers in-training admitted to the Elementary School class at the beginning of a session must be able to parse correctly a simple English sentence ; to write a neat dictation from any school reader, with no more than five per cent. of mistakes in spelling, in the use of capitals, and in the division of words into syllables ; to give the names and state the positions of the continents, of the oceans, of the greater islands, peninsulas, capes, mountains, gulfs, bays, straits, lakes, rivers, and the chief political divisions and most important cities of the world ; and to work correctly examples in the simple rules of arithmetic and in fractions.

(c) Teachers-in-training are expected to give their whole time and attention to the work of the school, and are not permitted to engage in any other course of study or business during the session of the school.

There shall be no intercourse between male and female teachers in-training while in school or when going to or returning from it. Teachers of one sex are strictly prohibited from visiting those of the other.

Teachers-in-training who leave the Normal School in the middle of a session are expected to assign to the Principal satisfactory reasons, accompanied, in case of failure of health, by medical certificates.

(d) The J. C. Wilson prize of forty dollars and a book, annually chosen by the donor, shall be given to that teacher-in-training of the Elementary School class who passes for a diploma, and takes the highest aggregate of marks at the final examination of the year.

The Prince of Wales' medal and prize shall be given to that teacher-in-training of the Model School class who passes for a diploma, and takes the highest aggregate of marks at the final examination of the year.

(e) In order to be recognized as teachers-in-training for the Academy diploma, Students who have fulfilled the conditions stated in the regulations of the Protestant Committee of the Council of Public Instruction, must apply at the beginning of each collegiate year to the Principal of the Normal School for enrolment, and for certificates of enrolment to be presented to the Dean of the Faculty of Arts. Having entered college, they must report to the Principal of the Normal School from time to time, as he may require, and must furnish him with certificates of having successfully passed their several examinations, without which certificates, signed by the Dean of the Faculty or his representative, no bursaries shall be paid. It is held that no student who has passed lower than second class in two of the four subjects, Mathematics, Latin, Greek and French, or who has failed in any one of these subjects, has passed "creditably" at any college examination. But in order to secure a first-class Academy diploma and a bursary at the end of the second year, it is necessary to pass in both Latin and Greek not lower than second class at the intermediate examinations.

(f) The date of the examination of graduates in Arts for Academy diplomas shall be the 20th day of May, or the school day next succeeding that date ; the hours shall be from 10 a.m. to 12 noon.

(g) No boarding house is attached to the institution, but every care will be



taken to ensure the comfort and good conduct of the students in private boarding houses approved by the Principal, who will furnish lists to applicants for admission. Board can be obtained at from \$12 to \$16 per month.

## IX. COURSE OF STUDY.

N.B.—The subjoined Course of Study has been designed, and all instruction in it is given with express reference to the work of teaching.

### I. ELEMENTARY SCHOOL CLASS, STUDYING FOR THE ELEMENTARY SCHOOL DIPLOMA.

With the view of accomodating teachers actually in charge of schools at the commencement of the Session, and whose previous education may enable them to enter at a more advanced period, the course of study in this class is divided into terms as follows:

FIRST TERM, from September 2nd to December 3rd.

*(Entrance Examination as stated above.)*

*English.*—The structure of sentences. Orthography and orthoëpy. Penmanship. The study of Milton's *L'Allegro*, and the sermon on the Mount, Matt. V, VI and VII.

*Geography.*—General view of continents and oceans. North and South America, *Eléments de Géographie moderne*.

*History.*—Outline of general history. *Histoire du Canada en Français*.

*Arithmetic.*—Simple and compound rules.

*Algebra.*—The elementary rules.

*Geometry.*—Elementary notions, with *Mensuration*.

*French.*—Darey's *Principes de Grammaire Française* to page 50, with verbs of first conjugation. *Méthode naturelle*. Curtis' *Oral Lessons in French*.

*Latin.*—Grammar ; a *Delectus of Cæsar*.

*Botany.*—High School Botany, Spotton.

*Chemistry.*—Lectures.

*Reading and Elocution.*

*Drawing.*—Elements, simple outlines and map drawing.

*Music.*—Vocal music with part songs. Junior Certificate of Tonic Sol-Fa College.

*Art of Teaching.*—Lectures on school organization and discipline, and on methods of teaching particular subjects.

SECOND TERM, January 6th to end of Session.

*(No pupils will be received after the commencement of this term. Those who enter must pass the examination of the class in the work detailed above.)*

*English.*—Structure of words and sentences. Etymology, derivation and syntax. Study of Macaulay's *Essay on Milton* and of Goldsmith's *Deserted Village*.

*Geography*.—Contour, elevations, river systems, political divisions and chief cities of the old world.

*History*.—Outline of general history. Sacred. Histoire du Canada continuée.

*Arithmetic*.—Fractions, Decimals, Proportion, Interest.

*Book-keeping*.—Single Entry.

*Algebra*.—Simple equations of one unknown quantity, with problems.

*Geometry*.—First book of Euclid, with deductions.

*Art of Teaching*.—Lectures continued.

*French*.—Principes de Grammaire Française, page 100, with verbs regular and irregular. Méthode naturelle.

*Latin*.—Grammar ; Cæsar Gallic War, Book I.

*Botany*.—High School Botany, Spotton.

*Physiology and Hygiene*.—Lectures.

*Reading and Elocution*.

*Drawing*.—Freehand drawing from the solid, and elements of perspective.

*Music*.—Elements of vocal music and part songs. Elementary Certificate of Tonic Sol-Fa College.

*Practice in Teaching* in the McGill Model Schools, as directed by the Principal.

*Religious Instruction* will be given throughout the Session.

In addition to the text-books named above, each Student of the Elementary School Class must be provided with an Atlas of recent date, an Arithmetic, an Algebra and a Euclid.

## 2. MODEL SCHOOL CLASS, STUDYING FOR THE MODEL SCHOOL DIPLOMA.

*Students entering the School in this second year must have passed a satisfactory examination in the subjects of the Elementary School Class. The Class will pursue its studies throughout the Session, without division into terms.*

*English*.—Principles of grammar and composition. Style. History of the English Language. Study of Shakespeare's Tempest, Scott's Lady of the Lake, Tennyson's Lotus Eaters.

*Geography*.—Mathematical and physical. Use of the globes.

*History*.—England, Rome.

*Art of Teaching*.—Lectures on school organization and discipline and on methods of teaching particular subjects.

*Arithmetic*.—Commercial arithmetic. Logarithms. Properties of numbers

*Book-keeping*.—Double entry.

*Algebra*.—Equations of more than one unknown quantity, and quadratics.

*Geometry*.—Second, third and fourth books of Euclid, with application to mensuration.

*Object Lessons*.

*Latin*.—Grammar ; Virgil, *Æneid*, Book I.

*French*.—Translation from French, into English and from English into French. Darey's *Principes de Grammaire*. *Eléments de Littérature française*, *Lectures françaises*, *Méthode Berlitz*, *Histoire de France*.

*Agricultural Science*.—Principles, especially chemical and botanical, and application to Canadian agriculture.

*Elocution*.

*Drawing*.—Elements of perspective, drawing from the cast and map drawing.

*Music*.—Instrumental music, part songs and rudiments of harmony. Intermediate Certificate of Tonic Sol-Fa College.

*Practice in Teaching*.—In the McGill Model Schools, as directed by the Principal.

*Religious Instruction* throughout the Session.

Such Students as, from their conspicuous ability and preparation, may be selected to enter the Academy Class of the Normal School, will, in addition to the work given above, read Xenophon, *Anabasis*, Book I., and Cæsar, *Bell. Gal.*, Book II., with special attention to Greek and Latin Grammar.

Other Students of exceptional ability may, with the consent of the Principal and the Professors of the several subjects, choose one of the following courses of extra study :—

(a) Mathematics : trigonometry.

(b) Old English.

(c) French : classiques français, composition et grammaire.

(d) Drawing : water-color.

(e) Music : violin.

In addition to the text-books named above, each Student of the Model School Class must be provided with an Arithmetic, an Algebra, a Euclid, and Dawson's *Scientific Agriculture*.

### 3. ACADEMY CLASS, STUDYING FOR THE ACADEMY DIPLOMA.

Will follow two years the course of McGill University and its affiliated colleges, or that of Bishop's College, Lennoxville, being enrolled on the books of the Normal School, and receiving a bursary from the Normal School, not exceeding \$30 per annum, and such tutorial assistance as may be deemed necessary. Such Students must take in their courses such options only as are approved by the Principal of the Normal School.

The course for the current year in the McGill College, and in Bishop's College, may be learned by application to J. W. Brakenridge, B.C.L., McGill College, Montreal, or to Rev. Principal Adams, D.C.L., Bishop's College, Lennoxville.

## SYLLABUS OF LECTURES ON PEDAGOGY.

(Open to Graduates and Undergraduates.)

## THE LEGAL POSITION OF THE TEACHER.

1. The organization of Public Instruction in Quebec. 2. The relation of the teacher to the Department of Public Instruction and to the Protestant Committee of the Council of Public Instruction. 3. The relation of the teacher to school commissioners and parents. 4. The relation of teacher to pupils. 5. The teacher as a member of a profession.

## DISCIPLINE.

6. Discipline as a means of immediate pleasure to pupils. 7. Discipline as tending to school success. 8. Discipline as a preparation for life. 9. Discipline developing character. 10. Discipline enforced by authority.

## INSTRUCTION IN SPECIAL SUBJECTS.

11. English reading, writing, grammar. 12. Literature, composition. 13. French. 14. The classics. 15. Number ; arithmetic and algebra. 16. Form ; geometry. Number and form ; trigonometry and mensuration. 17. Geography and history. 18. Botany and chemistry. 19. Drawing and music. 20. The acquisition of general knowledge.

## PHYSICAL DEVELOPMENT.

21. Health. 22. Growth. 23. The training of the eye. 24. The training of the ear. 25. The training of the hand.

## MENTAL DEVELOPMENT.

26. The training of the analytic faculty. 27. Observation and experiment. 28. The training of the synthetic faculty. 29. Understanding. 30. Judgment and reason. 31. Invention. 32. Imagination. 33. Memory of sensations. 34. Memory of conceptions. 35. Verbal memory.

## MORAL DEVELOPMENT.

36. Training in truthfulness. 37. In justice and purity. 38. In philanthropy and patriotism. 39. In earnestness. 40. In good manners.

## MODEL SCHOOLS OF THE MCGILL NORMAL SCHOOL.

Boys' School.—Orrin Rexford, B.A.Sc., *Head Master*.

Elizabeth Reid, }  
Grace Millar, } *Assistants*.

Girls' School.—Mary I. Peebles, *Head Mistress*.

Selina F. Sloan, }  
Ethel Stuart, } *Assistants*.  
Gertrude Blackett, }

Primary School.—Lucy H. Derick, *Head Mistress*.

Annie L. Woodington, }  
Clara L. Douglas, } *Assistants*.

Louise Derick, *Kindergarten*.

These Schools can accommodate about 400 pupils, are supplied with the best furniture and apparatus, and conducted on the most modern methods of teaching. They receive pupils from the age of four and upwards, and give a thorough English education. Fees : —Boys' and Girls' Model Schools, \$1.00 to \$1.50 per month ; Primary School and Kindergarten, 75c ; payable monthly in advance.



# University School Examinations

1897.

## FOR CERTIFICATES OF THE UNIVERSITIES AND THE TITLE OF ASSOCIATE IN ARTS.

HELD UNDER THE SUPERINTENDENCE OF MCGILL UNIVERSITY, MONTREAL,  
AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE; AND RECOGNIZED BY THE PROTESTANT COMMITTEE OF THE COUNCIL OF PUBLIC INSTRUCTION.

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These Examinations are held in Montreal and at Lennoxville; and local centres may be appointed elsewhere on application to the Principal of either University, accompanied with the names of satisfactory Deputy Examiners, and guarantee for the payment of necessary expenses.

The Examinations are open to Boys or Girls from any Canadian school.

### PART I.—ORDINARY A.A.

#### SUBJECTS OF EXAMINATION.

##### I. PRELIMINARY SUBJECTS.

*Writing.*

*English Dictation.*

*English Grammar, including Easy Analysis.*

A short *Essay* on a subject to be given at the time of the Examination.

*Arithmetic* (all the ordinary rules, including Square Root and a knowledge of the Metric System).

*Geography* (acquaintance with the maps of each of the four continents, and of British North America).

*British History and Canadian History.*

*New Testament History\** (Gospels and Acts, as in Maclear).

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\*Candidates will be exempted from examination in this subject only if their parents or guardians make written objection thereto. In such case Taylor's First Principles of Modern History will be required.

## II. OPTIONAL SUBJECTS.

## Section 1.—Languages.

*Latin :—*

|                                                                                                                  |   |           |
|------------------------------------------------------------------------------------------------------------------|---|-----------|
| Caesar.—Bell. Gall., Bks. I. and II.                                                                             | } | 200 marks |
| Virgil—Aeneid, Bk. I.                                                                                            |   |           |
| Latin Grammar and Prose Composition (Collar's Practical Latin Composition, Part III, Book I., or an equivalent). |   |           |
| Translation at sight from the easier Latin Authors.                                                              |   |           |

*Greek :—*

|                            |   |        |
|----------------------------|---|--------|
| Xenophon.—Anabasis, Bk. I. | } | 200 do |
| Homer.—Iliad, Bk. IV.      |   |        |
| Greek Grammar.             |   |        |

*French :—*

|                                        |   |        |
|----------------------------------------|---|--------|
| Grammar and Dictation.                 | } | 100 do |
| Translation at sight.                  |   |        |
| Easy translation, English into French. |   |        |

*German :—*

|                                       |   |        |
|---------------------------------------|---|--------|
| Grammar.                              | } | 100 do |
| Joynes' German Reader.                |   |        |
| Translation from English into German. |   |        |

## Section 2.—Mathematics.

*Arithmetic :—*

|                                                                                 |     |    |
|---------------------------------------------------------------------------------|-----|----|
| As required for Model School Diploma. "The use of seven figure Logarithms. .... | 100 | do |
|---------------------------------------------------------------------------------|-----|----|

*Geometry :—*

|                                                   |     |    |
|---------------------------------------------------|-----|----|
| Euclid, I., II., III., with easy Deductions. .... | 100 | do |
|---------------------------------------------------|-----|----|

*Algebra :—*

|                                                                                                                                       |     |    |
|---------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| Elementary Rules, Involution, Evolution, Fractions, Indices, Surds, Simple and Quadratic Equations of one or more unknown quantities. | 100 | do |
|---------------------------------------------------------------------------------------------------------------------------------------|-----|----|

*Plane Trigonometry :—*

|                                                    |     |    |
|----------------------------------------------------|-----|----|
| (As in Hamblin Smith, pp. 1-100, omitting Ch. XI.) | 100 | do |
|----------------------------------------------------|-----|----|

## Section 3.—English.

*The English Language :—*

|                                                                                |     |    |
|--------------------------------------------------------------------------------|-----|----|
| Meiklejohn's English Language, Parts I., II., III.<br>Trench's Study of Words. | 100 | do |
|--------------------------------------------------------------------------------|-----|----|

*English Literature :—*

|                                        |   |     |    |
|----------------------------------------|---|-----|----|
| Meiklejohn's English Language, Pt. IV. | } | 100 | do |
| Shakspeare's Richard II.               |   |     |    |
| Scott's Lady of the Lake.              |   |     |    |

|                                                                                          |     |    |
|------------------------------------------------------------------------------------------|-----|----|
| <i>History</i> .—(as in Primers of Greece and Rome, and Collier's<br>Great Events) ..... | 100 | do |
| <i>Geography</i> .—Physical, Political and Commercial .....                              | 100 | do |

**Section 4.—Natural and Physical Sciences, etc.**

|                                                                                                                                                           |     |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| <i>Zoology</i> (as in Nicholson's Introductory Text-Book) .....                                                                                           | 100 | do |
| <i>Botany</i> * (as in Spotton's High School Botany, with Penhallow's<br>Guide to the Collection of Plants, and Blanks for Plant<br>Descriptions †) ..... | 100 | do |
| <i>Chemistry</i> (as in Remsen's Elements of Chemistry, pp. 1 to 160) .....                                                                               | 100 | do |
| <i>Physiology and Hygiene</i> (as in Cutter's Intermediate) .....                                                                                         | 100 | do |
| <i>Physics</i> (as in Gage and Fessenden's High School Physics,<br>Chapters I., II., III.) .....                                                          | 100 | do |
| <i>Geometrical and Freehand Drawing</i> .....                                                                                                             | 100 | do |

*Geometrical*.—Vere Foster R<sup>1</sup> and R<sup>2</sup>, also problems 119  
to 129 of R<sup>3</sup>. or McLeod's Geometrical Drawing

*Freehand*.—Rules of Perspective, Drawing from the object (as in the  
Dominion Freehand Drawing books, numbers 1 to 5, inclusive).

**REGULATIONS.**

1. To obtain the Certificate of Associate in Arts, Candidates must pass in all the Preliminary subjects, and also in any six of the Optional subjects, provided that the six include one subject at least from each of the four Sections.

2. In addition to the six Optional subjects selected for passing, Candidates may take other Optional subjects, but the total possible number of marks obtainable in all the Optional subjects chosen must not exceed 1000.

3. Candidates will not be considered as having passed in any subject, unless they have obtained at least 40 per cent. of the total number of marks obtainable in that subject.‡

\* In connection with the Botany examination, marks will be given for collections of mounted specimens made in accordance with Penhallow's Guide to the Collection of Plants. The Head Teacher of each school will forward with the answers a specimen from each pupil's collection, and also (on a furnished form) a detailed statement as to the collections made. Not more than 50 specimens will be expected to constitute a collection, and marks may be allowed *pro rata* for fewer.

† These Blanks may be obtained from booksellers in Montreal or elsewhere.

‡ When two or more books or subjects are prescribed for one examination it is necessary to pass in each. Candidates will not be allowed to pass in the Preliminary Grammar, unless they show a satisfactory knowledge of Syntax, Parsing, Analysis, and questions connected therewith. In Classics, at least one-third of the marks allotted to grammar must be obtained.

4. The total number of marks gained by every Candidate in the Optional subjects shall be added up, and the Candidates arranged in order of merit in a printed list at the close of the Examination, those who are over 18 years of age on the first day of June being in a separate list. The marks in any subject shall not be counted if the Candidate has obtained less than 40 per cent. in that subject.

5. Candidates who obtain at least 75 per cent. of the marks in any Optional subject shall be considered as having answered creditably in that subject, and special mention of the same will be made in the Associate in Arts Certificate.

6. Candidates who pass in the subjects of the University Matriculation Examinations may, without further examination, enter the Faculties of Arts and Applied Science. (See Note 2 *infra*.)

7. Candidates who fail, or who may be prevented by illness from completing their examination, may come up at the next examination without extra fee.

8. Candidates who pass in all the Preliminary subjects may, at any subsequent examination, take the Optional subjects only, and without extra fee.

9. The Head Master or Mistress of each school must certify to the character and ages of the pupils sent up for examination.

10. The examinations will begin on Tuesday, June 1st, at 9 a.m.

11. Lists of the names, ages, and Optional subjects to be taken by the Candidates, together with a fee of \$4 for each Candidate, must be transmitted to the Secretary, McGill University, Montreal, on or before May 1st. (Blank forms and copies of the regulations will be furnished on application.)

NOTE 1.—No fees will be exacted for the examination of pupils of Academies under the control of the Protestant Committee; but in order to obtain the certificate from the Universities, the prescribed fee, viz., \$4, must be paid to the Secretary of the University Examiners.

Candidates who pass Grade II of the Academy Course of Study will be exempted from the Preliminary Subjects of the A.A. Examination.

The answers must be written in the answer book, specially made for the purpose, under the direction of the Board of Examiners.

The complete regulations of the Protestant Committee of the Council of Public Instruction with reference to these examinations may be obtained on application to the English Secretary, Department of Public Instruction, Quebec.

NOTE 2.—MATRICULATION SUBJECTS REFERRED TO IN REG. 6.

*In Arts*.—Greek, Latin, Geometry, Algebra, Arithmetic, English Dictation, English Grammar, British History. (Women may substitute French for Greek.)

*In Applied Science.*—Geometry (Euclid, Bks. I. to IV., VI., and definitions of Bk. V.), Algebra, Trigonometry, Arithmetic, English Dictation, English Grammar, British History.

After entrance in Arts or Applied Science, French or German must be studied. In the former subject an entrance examination is required, but may be passed either in June or in September; Candidates who are unable to pass must study German after entrance. Women who omit Greek must pass the entrance examination in French and German, and afterwards study both French and German.

[Matriculation Examinations are also held at the opening of the University Session in September. See Calendars of the Universities.]

## PART II.—ADVANCED A.A.

### SUBJECTS OF EXAMINATION.

#### I. PRELIMINARY SUBJECTS.

As under Part I.

#### II. OPTIONAL SUBJECTS.

##### Section 1.—Languages.

##### *Latin :—*

Virgil.—Aeneid, I.

Cicero.—In Catilinam, I. and II.

Grammar, Prose Composition (Collar's Practical Latin Composition, Parts III. and IV.), and Translation at sight from Caesar and Nepos.

##### *Greek :—*

Xenophon.—Anabasis, I. and II.

Homer.—Iliad, IV., and Odyssey, VII.

Grammar and Prose Composition (Abbott's Arnold's Greek Prose Composition, Exercises 1 to 25).

##### *French :—*

Lamartine, Jeanne d'Arc.

Molière, Le Bourgeois Gentilhomme.

Translation at sight from French into English, and from English into French.

Grammar and Dictation.

##### *German :—*

Lessing, Emilia Galotti.

Schiller, Der Kampf mit dem Drachen.

Grammar and translation from English into German.



## Section 2.—Mathematics.

*Geometry* :— .

Euclid, Bks. I. to IV., Defins. of Bk. V., Bk. VI.

*Algebra* :—

.To the end of Progressions.

*Trigonometry* :—

As in Hamblin Smith (the whole).

## Section 3.—English.

*The English Language* :—

Lounsbury's History of the English' Language.

Mason's English Grammar.

A Composition.

*English Literature* :—

Meiklejohn's English Language, Pt. IV.

The Elizabethan Period (Morley's First Sketch).

Milton's Paradise Lost, Bks. I and II.

*History* :—

Grecian History.—The Persian and Peloponnesian Wars.

Roman History.—From the Wars of Marius and Sulla to the death of Tiberius.

English History.—The Reformation and Puritan England, as in Green's Short History.

## Section 4.—Natural and Physical Sciences, etc.

*Botany* :—Gray's Text-Book.

General Morphology and Classification, Determination of Canadian Species exclusive of Thallophtes. Distribution of Orders represented in Canada.

Credit will be given for collections of plants as under Part I.

*Chemistry* :—Inorganic, as in Remsen's Elements.

Also, an examination in Practical Work (to be held only in Montreal and at Lennoxville).

*Physics* :—As in Gage and Fessenden's High School Physics.

Also, an examination in Practical Work (to be held only in Montreal and at Lennoxville).

*Drawing* :—Orthographic Projection, including Simple Penetrations, Developments and Sections, as in Davidson's Orthographic Projection.

## REGULATIONS.

The Regulations of Part I., with the following modifications and additions, will apply to the advanced subjects :—

1. Candidates who pass in six of the advanced subjects (including one at least from each of the four Sections) will receive an Advanced A. A. certificate. The number of marks given to each subject will be the same as in Part I., and additional advanced subjects may be taken as in Reg. 2, Part I.

2. Candidates who fail in one or more of the subjects required for the advanced A. A. may, on the recommendation of the Examiners, be given an ordinary A. A. certificate.

3. The examinations in the advanced subjects will be held at the same time and in the same manner as those in the ordinary subjects. They will be open to all who have already passed in the preliminary subjects, whether they have taken the ordinary A. A. or not. The preliminary subjects must be taken either one or two years before the advanced subjects.

4. Candidates who pass the advanced examinations in Greek, Latin, Geometry, Algebra, and English Language\* shall be considered as having passed the Higher Matriculation Examination of the First Year in Arts, McGill University.

5. Candidates must, before May 1st, give notice of intention to present themselves for the examination, specifying the optional subjects in which they wish to be examined.

6. The ordinary fee of \$4.00 must be paid before taking the preliminary subjects, and an additional fee of \$10 at the time of making application for the advanced examinations.† A Candidate who fails to pass the Advanced A. A. Examination shall be required to pay a fee of \$5 for every subsequent Advanced A. A. Examination at which he may present himself.

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\* French as in Part I., Note 2.

† Candidates from Academies under the control of the Protestant Committee of the Council of Public Instruction are exempt from the former fee, but not from the latter.

# LIST OF SUCCESSFUL CANDIDATES.

## RESULTS OF EXAMINATIONS, 1896.

### ADVANCED ASSOCIATE IN ARTS.

| No.                              | MARKS. |
|----------------------------------|--------|
| 1. Louis Reford,                 | 464    |
| <i>I. Under 18 Years of Age.</i> |        |

### ASSOCIATES IN ARTS.

|                                                           |         |     |
|-----------------------------------------------------------|---------|-----|
| 10. John A. Nutter (Montreal High School),                | 823     |     |
| 51. Lester Cooke (Montreal Coll. Institute),              | 806     |     |
| 211. Gladys Dyer (Westmount Academy),                     | 794     |     |
| 40. Bertha D. Parsons (Montreal High School, Girls'),     | 781     |     |
| 157. Wendell Hill (Stanstead College),                    | 769     |     |
| 24. George W. Scott (Montreal High School),               | 748     |     |
| 13. James A. Henderson (Montreal High School),            | } equal | 741 |
| 43. Bella Marcuse (Girls' High School, Montreal),         |         |     |
| 60. Arthur Paterson (Montreal Coll. Institute),           |         | 694 |
| 8. Donald Cochrane (Montreal High School),                |         | 730 |
| 9. Abraham Cohen (Montreal High School),                  |         | 716 |
| 54. George W. Grier (Montreal Coll. Institute),           |         | 713 |
| 37. Margaret Howe (Montreal High School, Girls'),         |         | 712 |
| 66. Frank Walker (Montreal Coll. Institute),              |         | 710 |
| 26. Henry Weinfeld (Montreal High School),                |         | 704 |
| 30. Edith A. Garlick (Montreal High School, Girls'),      |         | 702 |
| 32. Alice M. Edwards (Girls' High School, Montreal),      |         | 684 |
| 202. Frederick H. Barrington (Waterloo Academy),          |         | 683 |
| 100. Elizabeth I. Willis (Dunham Ladies' College),        |         | 674 |
| 14. Hubert G. Hibbs (Montreal High School),               | } equal | 669 |
| 45. Mabel Molson (Girls' High School, Montreal),          |         |     |
| 162. Harriet L. Page (Stanstead Wesleyan College),        | } equal | 668 |
| 197. Catherine M. Fanjoy (Girls' H. S., St. John, N.B.),  |         |     |
| 38. E. Gertrude Jackson (Girls' High School, Montreal),   |         | 666 |
| 218. Walter Ray (Westmount Academy),                      |         | 661 |
| 55. Laurence Hill (Montreal Coll. Institute),             |         | 659 |
| 29. Edward C. Woodley (Montreal High School),             |         | 653 |
| 188. Annie E. Blair (Girls' High School, St. John, N.B.), |         | 649 |

| No.                                                              | Marks.      |
|------------------------------------------------------------------|-------------|
| 62. Lorne Ross (Montreal Coll. Institute),                       | 643         |
| 12. Robert H. Gillean (Montreal High School),                    | 641         |
| 154. Mary F. Flint (Stanstead Wesleyan College),                 | 634         |
| 81. Mary H. Brooks (Compton Ladies' College),                    | } equal 632 |
| 127. Joseph H. Copeman (Quebec High School),                     |             |
| 200. Ma garet H. Robb (Girls' High Sc., St. John, N.B.),         |             |
| 217. Edna Mills (Westmount Academy),                             |             |
| 65. Harold Trenholme (Montreal Coll. Institute),                 | 622         |
| 155. Roy A. Flint (Stanstead Wesleyan College),                  | 619         |
| 208. Vivian Clogg (Westmount Academy)                            | 618         |
| 146. Willard B. DeWolf (St. Lambert Model School) } equal        | 617         |
| 206. Mildred Brodie (Westmount Academy),                         |             |
| 189. Josephine O. Bostwick (Girls' High School, St. John, N.B.), | 615         |
| 219. William Walford (Westmount Academy),                        | 600         |
| 89. Maud Lefebvre (Cookshire Academy),                           | } equal 603 |
| 114. Christina M. Palliser (Lachute Academy)                     |             |
| 21. Charles F. Ritchie (Montreal High School),                   | 598         |
| 209. Alexander Currie (Westmount Academy),                       | 595         |
| 49. Jessie Stewart (Girls' High School, Montreal),               | 591         |
| 34. Elizabeth S. Fenwick (Girls' High School, Montreal),         | 586         |
| 191. Blanche Clift (Girls' High School, St. John, N.B.),         | 585         |
| 187. Louise G. Beatteay (Girls' High School, St. John, N.B.),    | 584         |
| 4. Walter Brown (Montreal High School),                          | 574         |
| 30. Margaret E. Bennett (Girls' High School, Montreal),          | } equal 573 |
| 133. Horatio Walker (Quebec High School),                        |             |
| 35. Louise C. Garlick (Girls' High School, Montreal),            | 560         |
| 86. Arthur Cowling (Cookshire Academy),                          | 559         |
| 195. Louise Hegan (Girls' High School, St. John, N.B.),          | 554         |
| 64. John E. Tiffin (Montreal Coll. Institute),                   | 553         |
| 105. Roberta A. McKillop (Inverness Academy),                    | 550         |
| 40. Hortense E. Lawrence (Girls' High School, Montreal),         | 532         |
| 113. Janie McQuat (Lachute Academy),                             | } equal 528 |
| 145. Alice Woodworth (St. Johns H. S., Quebec),                  |             |
| 156. Helen M. Hill (Stanstead Wesleyan College)                  | 526         |
| 20. John H. Pangman (Montreal High School),                      | } equal 508 |
| 215. Henriette Harvey (Westmount Academy).                       |             |
| 166. Edith A. Campbell (Sherbrooke Academy),                     | } equal 507 |
| 167. Emma M. Giff (Sherbrooke Academy),                          |             |
| 194. Ethel M. Heans (Girls' H. S., St. John, N.B.),              |             |
| 15. Charles E. Hyde (Montreal High School),                      | } equal 495 |
| 103. M. A. Hanran (Inverness Academy),                           |             |
| 482. Estella M. A. Vaughan (Girls' H. S., St. John, N.B.),       | 488         |
| 203. Mabel M. Libby (Waterloo Academy),                          | 481         |
| 101. Ella M. Bradford (Granby Academy),                          | 477         |
| 61. Arthur Reinhardt (Montreal Coll. Institute),                 | 475         |
| 25. Lewis McI. Terrill (Montreal High School),                   | 469         |

| No.                                                   | Marks.      |
|-------------------------------------------------------|-------------|
| 204. Grace C. Macfarlane (Waterloo Academy),          | 468         |
| 210. Louise Currie (Westmount Academy),               | 467         |
| 50. Elizabeth Turfus (Girls' High School, Montreal),  | 459         |
| 164. J. Arthur Robinson (Stanstead Wesleyan College), | 447         |
| 207. Howard Clogg (Westmount Academy),                | 446         |
| 111. Harry S. Williams (Knowlton Academy),            | 445         |
| 59. Rupert Howard (Montreal Coll. Institute),         | 438         |
| 23. David F. Robertson (Montreal High School),        | 435         |
| 159. Lennie Holland (Stanstead Wesleyan College),     | 429         |
| 84. M. Winifred Reade (Compton Ladies' College),      | 428         |
| 18. Sydney Mitchell (Montreal High School),           | 426         |
| 174. Jacob Samuels (Sherbrooke Academy),              | 419         |
| 2. Hugh H. Boyd (Montreal High School),               | 415         |
| 27. Samuel S. Wells (Montreal High School),           | 407         |
| 112. Nora A. Brantford (Lachute Academy).             | 405         |
| 169. Ella H. McPhadden (Sherbrooke Academy),          | 396         |
| 3. Charles M. Brewster (Montreal High School),        | 395         |
| 33. Jennie Eveleigh (Girls' High School, Montreal),   | 394         |
| 53. Andrew Forman (Montreal Coll. Institute),         | 393         |
| 58. Ernest Hawley (Montreal Coll. Institute),         | } equal 380 |
| 175. Una M. Williams (Sherbrooke Academy),            |             |
| 97. Robert H. Stevenson (Danville Academy),           | 376         |
| 176. Percy D. Boright (Sutton Academy),               | 375         |
| 78. Chauncey A. Adams (Coaticook Academy),            | 374         |
| 126. Fraser Sutherland (Paspebiac Model School),      | 355         |
| 83. Etta M. Munroe (Compton Ladies' College),         | 347         |
| 104. A. H. King (Inverness Academy),                  | 341         |
| 11. David L. Crawford (Montreal High School),         | 337         |
| 44. Eliza Miller (Girls' High School, Montreal),      | 325         |
| 230. Alice Harbour (Haldimand Model School),          | 321         |
| 91. Mabel McRae (Cookshire Academy),                  | 317         |
| 134. George S. Ewing (St. Francis Coll. School),      | 290         |

## II. Over 18 Years of Age.

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| 226. Robert Elder (Huntingdon Academy),                           | 746 |
| 98. Ada A. Ellison (Cowansville Academy),                         | 659 |
| 229. Alex. F. Rowatt (Huntingdon Academy),                        | 658 |
| 224. Helen D. Buckham (Huntingdon Academy),                       | 648 |
| 129. Jules O. Lefebvre (Quebec High School),                      | 636 |
| 196. Georgina G. S. Godfrey (Girls' High School, St. John, N.B.), | 630 |
| 214. Maggie Greig (Westmount Academy),                            | 578 |
| 177. Frank O. Call (Sutton Academy),                              | 570 |
| 42. Maggie M. Luttrell (Girls' High School, Montreal),            | 568 |



| No.                                                          | Marks. |
|--------------------------------------------------------------|--------|
| 205. Lee W. Martin (Waterloo Academy),                       | 565    |
| 28. Percival S. Wood (Montreal High School),                 | 553    |
| 228. William Ness (Huntingdon Academy),                      | 540    |
| 82. Faith Fyles (Compton Ladies' College),                   | 532    |
| 199. Frances B. Perley (Girls' High School, St. John, N.B.), | 488    |
| 106. Minnie B. Letendre (Kingston Ladies' College),          | 470    |
| 165. Georgie M. Bradley (Sherbrooke Academy),                | 450    |
| 158. Effie Holland (Stanstead Wesleyan College),             | 423    |
| 130. Franklin Gray (Quebec High School),                     | 411    |
| 227. Alexander Gardner (Huntingdon Academy),                 | 401    |
| 172. Grace E. Nourse (Sherbrooke Academy),                   | 395    |
| 128. Haram P. Hicks (Quebec High School),                    | 387    |
| 6. Herbert Charters (Montreal High School),                  | 385    |
| 90. Beatrice Mackie (Cookshire Academy),                     | 373    |
| 72. Bertha Sayer (Aylmer Academy),                           | 360    |
| 99. Lydia R. Coslett (Dunham Ladies' College),               | 342    |
| 168. Lizzie Horton (Sherbrooke Academy),                     | 323    |
| 70. Bertha Garton (Aylmer Academy),                          | 321    |
| 79. Cora A. Davis (Coaticook Academy),                       | 314    |

PASSED THE PRELIMINARY SUBJECTS.

(In order of numbers.)

[illegible]

## MCGILL UNIVERSITY, MONTREAL.

JUNE, 1896.

The following Candidates have passed the Examinations required for  
Entrance.

*I. In Arts and Medicine.*

|                        |                  |                       |                  |
|------------------------|------------------|-----------------------|------------------|
| Buckham, Helen D.,     | Huntingdon, Q    | Lefebvre, Jules O.,   | Quebec           |
| Chamberlain, Alex. F., | Ottawa           | Lunder Jeanne F.,     | Montreal         |
| Cleghorn, Jas. H.,     | Montreal         | Mackinnon, Cecil G.,  | Montreal         |
| Clogg, Vivian,         | Westmount, Q     | McBean, Grace,        | Westmount, Q     |
| Cochrane, Donald,      | Montreal         | Marcuse, Bella,       | Montreal         |
| Cohen, Abraham,        | Montreal         | Mills, Edna,          | Westmount, Q     |
| Cooke, Lester,         | Montreal         | Morrow, Jas. J.,      | Fergus, O        |
| Copeman, Joseph H.,    | Quebec           | Ness, Wm.,            | Huntingdon, Q    |
| Currie Alexander,      | Westmount, Q     | Noyes, Ralph,         | Montreal         |
| Dyer Gladys,           | Westmount, Q     | Nutter, John A.,      | Montreal         |
| DePencier Jos.,        | Vancouver, B.C.  | Ogden, Chas. G.,      | Three Rivers, Q  |
| Dixon, Jas. Dodd,      | Montreal         | Parsons, Bertha D.,   | Montreal         |
| Edwards, Alice M.,     | Montreal         | Paterson, Arthur,     | Montreal         |
| Edwards, Wm.,          | Ottawa           | Ritchie, Chas. F.,    | Montreal         |
| Ells, Sydney C.,       | Ottawa           | Ross, Lorne,          | Montreal         |
| Flint, Mary F.,        | Stanstead, Q     | Rowatt, T. Alex.,     | Huntingdon, Q    |
| Flint, Roy A.,         | Stanstead, Q     | Shepherd, Ernest G.,  | Montreal         |
| Fraser, Kath., N.      | Westminster, B.C | Simpson, S. H.,       | Vankleek Hill, O |
| Garlick, Edith,        | Montreal         | Smith, Frederick,     | Montreal         |
| Garlick, Louise,       | Montreal         | Stewart, Jessie,      | Montreal         |
| Greig, Maggie,         | Westmount, Q     | Stewart, Chas. A.,    | Williamstown, O  |
| Grier, Geo. W.,        | Montreal         | Tiffin, John E.,      | Montreal         |
| Hibbs, Herbert G.,     | Montreal         | Trenholme Harold,     | Westmount, Q     |
| Hill, Helen A.,        | Stanstead, Q     | Walker, Horatio,      | Quebec           |
| Hill, Wendell,         | Stanstead, Q     | Weinfred, Henry,      | Montreal         |
| Holland, Linnie,       | Stanstead, Q     | Willis, Elizabeth I., | Dunham, Q        |
| Horsfall, Frank L.,    | Montreal         | Wood, Percival S.,    | Montreal         |
| Jackson, E. Gertrude,  | Montreal         | Woodley, Edward C.,   | Montreal         |
| Jenkins, Arthur J.,    | Montreal         | Walford, Wm.,         | Westmount, Q     |
| King, Ada B., N.       | Westminster, B.C | Watson, Geo. A.,      | Williamstown, O  |
| Lefebvre, Maude,       | Cookshire, Q     |                       |                  |

*II. In Medicine.*

|                       |                 |                       |                 |
|-----------------------|-----------------|-----------------------|-----------------|
| Adams, Chauncey A.,   | Coaticook, Q    | Gunn, Wm. J.,         | Williamstown, O |
| Barrington, Fred. H., | Waterloo, Q     | Henderson, James A.,  | Montreal        |
| Boright, Percy D.,    | Sutton, Q       | Hicks, Hiram P.,      | Quebec          |
| Bridgette, Samuel,    | Sawyerville, Q  | Hosmer, Elwood B.,    | Montreal        |
| Brown, Walter,        | Montreal        | Martin, Lee W         | Waterloo, Q     |
| Donaldson, Anson S.,  | Brockville, O   | Pangman, John H.,     | Montreal        |
| Duncan, James W.,     | Montreal        | Phelan, Wm. A.,       | Montreal        |
| Elder, Robert,        | Huntingdon, Q   | Robertson, J. Arthur, | Stanstead, Q    |
| Fitzpatrick, Ch. A.,  | Williamstown, O | Scott, George W.,     | Montreal        |
| Gardner, Alex.,       | Huntingdon, Q   | Stevenson, Robert A., | Danville, Q     |
| Gray, Franklin,       | Quebec          | +Walker, Frank,       | Montreal        |

+ Passed also in Applied Science.

## III. In Applied Science.

|                       |                   |                        |               |
|-----------------------|-------------------|------------------------|---------------|
| Adams, Francis P.,    | Brantford, O      | Moore, N. J.,          | Arnprior, O   |
| Donaldson, Hugh W.,   | Hamilton, O       | Ogilvie, Howard,       | Montreal      |
| Gillean, Robert H.,   | Montreal          | Osborne, James E. K.,  | Toronto       |
| Hill, Lawrence,       | Montreal          | Pike, Gordon McT.,     | Montreal      |
| Howard, Rupert,       | Montreal          | Robertson, Phillip K., | Fort Hope, O  |
| Ingraham, Elwin W.,   | Sydney, C.B.      | Sharpe, Pearce,        | Montreal      |
| Jost, Percy M.,       | Sydney, C.B.      | Shepherd, Henry L.,    | Brookville, O |
| McDonald, Moorehouse, | Sydney, C.B.      | Siss, Paul F.,         | Montreal      |
| McLaren, John H.,     | Pembroke, O       | Smith, Geo. B.,        | Stratford, O  |
| Miller, Angus K.,     | St. Catharines, O |                        |               |

## STANDING IN THE OPTIONAL SUBJECTS.

[The numbers correspond with those in the preceding lists. Candidates whose numbers are in parentheses are equal in standing. Those preceding a single asterisk have obtained at least three-fourths of the marks; those preceding a double asterisk, at least one-half; those following, at least forty per cent. The numbers of the Schools and Candidates are as follows. Montreal High School (Boys'), 2-29 and 234-290; Montreal High School (Girls'), 30-50 and 291-335; Montreal Collegiate Institute, 1 and 51 to 61 and 336-362; Abingdon School, 67-69; Sabrevois School, 455; Aylmer Academy, 70-73; Bedford Academy, 75 and 77; Coaticook Academy, 78-80; Compton Ladies' College, 81-84; Cookshire Academy, 85-92; Danville Academy, 96 and 97; Cowansville Academy, 98; Dunham Ladies' College, 99 and 100; Granby Academy, 101 and 102; Inverness Academy, 103-105; Kingston Ladies' College, 106 and 107; Knowlton Academy, 108-111; Lachute Academy, 112-114; Mansonville Model School, 116-118; Ormstown Model School, 119-124; Paspebiac Model School, 125 and 126; Quebec High School, 127-133; St. Francis' College School, 134-136; St. John's High School, P. Q., 137-145; St. Lambert Model School, 146 and 147; Sawyerville Model School, 148-151; Stanstead College, 154-164; Sherbrooke Academy, 165-175; Sutton Academy, 176-179; Three Rivers Academy, 180-184; Victoria Girls' High School, St. John, N.B., 185-201 and 482; Waterloo Academy, 202-205; Westmount Academy, 206-219; Berthier Grammar School, 220-223; Huntingdon Academy, 224-229; Haldimand Model School, 230; Roslyn College, Montreal, 231; The Misses Gairdner, 372; The Miss Symmers' and Miss Smith's, 363 and 365; Girls' High School, Quebec, 373-375].

*Latin*.—157, 46, 49, 19, (51, 211), 81,\* 45, (26, 36), 162, 189, 60, 24, (188, 206), 146, 54, 37, (38, 197, 202), (204, 226), (14, 32), 196, (82, 166), (9, 42), 62, 217, 205, 154, 186, (35, 156), (13, 127, 200), (16, 29, 31, 224), (155, 191), (64, 164, 184, 194, 229), (43, 100), (106, 187), (30, 34, 66, 209), (86, 114, 167, 177), 228, 133, (84, 89), (21, 129), 97, 8, 172, 145, 159, (105, 165), (28, 208),\*\* (158, 199), (101, 174), (190, 219), (20, 50, 214), (18, 40, 103, 113, 192, 203), (4, 52, 128), (65, 91, 130, 482), 227, 78, (83, 98), (195, 215), (88, 176), (112, 148, 182), 61.

*Greek*.—19, 9,\* 51, 36, 184, 157, 26, 54, 32, 38, 127, (8, 62), 155, (65, 129), 14, 133, 29, 219, 64,\*\* (16, 21), (35, 217), 208, 229, 28, 228, 224, 209, 218, (60, 207), 111.

*French*.—81, 90, 162, 136, (133), (130, 220), 106, 8, (19, 211), 43,\* 129, (98, 217), 146, (7, 49, 127, 26, 224), 169, (18, 29, 37, 33), (20, 24, 145), (21, 141, 167), (36, 206), 166, (15, 16, 51, 91, 183, 219), (9, 27, 100, 196, 202, 205), (28, 228), (50, 62, 96, 184, 195), 60, (4, 47, 166, 206), (14, 40, 40, 114, 229), (30, 35, 42, 45, 86, 156, 157, 216), (6, 32, 55, 174, 177, 190, 200, 203), (3, 57, 64, 147, 187, 204), (128), (11, 13, 48, 91, 111, 175, 182, 218, 230), (2, 72, 165), (10, 12, 189, 210),\*\* (31, 33, 44, 105, 176, 208), (34, 151), (25, 181, 194, 227), (23, 168, 188, 191, 215), (118, 134, 155, 164), (39, 54, 85, 112, 117, 192, 199), (82, 104, 160, 172, 197), (66, 89, 92, 159, 170, 173), (58, 78, 87, 120, 154, 225), (59, 70, 79, 102, 103, 116, 119, 125, 126, 148, 163, 207, 209, 214).

*German*.—46, 43, 49, 211, 100, 48, (33, 45), 89, 214, 90, (55, 159), 154, 156, 218.

*Geometry*.—157, 209, 60, (184), (59), (9, 51, 207), (65, 200), (88, 66), (24, 55), (19, 23, 208), (32, 226), (14, 218), 155, (13, 162, 179, 196, 202, 211),\* 154, (28, 88), (219, 229), (96, 120, 177), (46, 128), (40), (37, 205), (36, 163), (38, 159, 217), (12, 18, 21, 34, 77, 156), (33, 98, 101, 145, 148, 175,

187, 212), (6, 54, 127, 130, 146, 189, 224), (53, 100, 106, 133, 203, 213, 215), (4, 26, 103, 173), (126, 210, 216), (73, 104, 129, 135), (15, 88, 90, 97, 149, 178, 227, 228), (20, 84, 89, 116, 214), (49, 99, 112, 134), (54, 82, 109, 117, 125, 191, 197), (11, 29, 61, 71, 194), (64, 81, 111, 195), (58, 70, 72, 78, 83, 105), (43, 165, 166, 199, 204),\*\* (25, 86, 161), (2, 31, 114), (35, 113), (164, 186), (118, 482), 141, 27, (10, 80, 158, 176), (17, 168, 185), (3, 56, 62, 63, 79, 87, 122, 136, 147, 167, 180, 190, 230, 233).

*Algebra*.—(8, 157), (60, 51, 225, (54, 61, 113, 226), (24, 15), (169, 209), (43, 162), (25, 27), (19, 86, 227, 229), (32, 45, 218), (26, 46, 78), 96, (100, 145), 37, (55, 65, 114, 126, 160, 179, 197), 98, (21, 36, 202), (52, 66, 82, 101, 211, 214, 219), (29, 112, 128, 154, 200), (58, 206),\* (103, 203), (21, 149), 13, 127, 133), (30, 148), (23, 81, 89, 180), (72, 129, 164, 207), (11, 105, 213), (59, 167, 175, 230), (14, 90), (146, 168, 196), (9, 57, 104, 182, 184), 208, (101, 130, 159, 188), (12, 155), 189, (80, 97), (2, 17, 34, 99), 50, (41, 49, 156), (4, 38, 56), (122, 191), (64, 70, 102, 117, 120), (42, 62, 73, 84, 166, 174),\*\* (83, 109), (35, 63, 71), (3, 165, 183, 187, 212), 190, (6, 16, 141, 161, 163, 185, 192, 193, 195, 204, 217), (15, 40, 44, 79, 134, 170), (39, 85, 158, 228), (31, 87, 91, 123, 233), (116, 176, 205, 210), (10, 20, 33, 135, 172, 194).

*Trigonometry*.—59, 66, 229, (60, 61), 54, 218, 55, (12, 224, 226),\* 51, 24, 4, 57, (13, 127, 129), 202, 64, 17, 52, 65, 96, 3,\*\* (27, 211), 179, 228, 25, (20, 53, 109).

*English Language*.—38, 482, 46, (36, 37, 43), 31, 35, (42, 106), 197, 187, (32, 34, 39, 50, 100, 186, 190, 195, 200),\* 199, 40, 44, (33, 45, 191, 196), (107, 189, 193), (41, 47), (30, 194), 188, 15, 49,\*\* (48, 192), (2, 10, 185).

*English Literature*.—62, 51, 9, 43, 19, (154, 217), 211, (29, 37, 100, 177), 98, (54, 58, 162, 229), (38), (12, 13, 14, 18, 26, 40, 42, 46, 49, 50, 66, 72, 81, 106, 156, 195),\* 36, (48, 55, 107, 188), (4, 24, 32, 191), (30, 25, 56, 70, 129, 194, 199), (21, 184), (34, 60, 186, 189, 228), (52, 71, 158), (190, 226, 482), (45, 67, 84, 146, 196), (3, 61, 157, 197, 202, 216), (6, 39, 59, 64), (8, 105, 127, 174, 212, 214), (82, 89, 155, 163, 179, 206, 218), (102, 103, 166), (53, 101, 104, 117, 126, 133, 178, 187), (130, 151), (20, 44, 73, 111), (33, 99, 163), (96, 164, 172),\*\* (23, 124, 145, 175, 208), (28, 31, 86, 182, 203, 213, 215, 227) (15, 63, 114, 224), (2, 57, 79, 83, 125, 128, 173), (41, 47, 80, 134, 159, 167, 176, 209, 232), (25, 97, 44), 210, (10, 77, 204, 225, 233), (149, 165, 200), (91, 112, 113, 147, 180).

*Optional History*.—(86, 89),\* 55, (81, 196), (98, 111, 155), 183, (157, 162), (62, 114, 197), 191, 158, (107, 164), 109, 189,\*\* 156, 108, (82, 195), (146, 186), (84, 187), (161, 177, 178, 482).

*Optional Geography*.—24, (18, 211), 29, (6, 66, 177), 202, (3, 12), 86, (13, 226), (8, 9, 103), (18, 51, 105), (14, 212), (23, 197, 214), (25, 58, 72, 98, 218),\* (4, 60, 114, 120, 191, 208, 210), (21, 26, 62, 126), (11, 190, 200, 213), 104, (2, 70, 89, 176, 219), (15, 71, 164, 225), (17, 53, 78, 145, 187, 206, 207, 209), (10, 22, 56, 99, 174, 188, 199), (77, 169, 215, 482), 194, (20, 54, 195), 165, 125, 193, 217, 28, 186), (90, 146, 230), (55, 88, 109, 116, 162), (27, 52, 117, 167, 216), (134, 165, 182, 185, 189, 05), (64, 79, 113, 172), (73, 166, 203), (92, 175, 182), (87, 101) (61, 161), (30, 59, 75, 192, 204), (52, 91, 102, 135, 147), 170,\*\* (119, 173), (63, 232), 124, (80, 118, 122, 136, 141), (108, 183), (85, 123, 80).

*Botany*.—46, 211, (34, 45, 226), 37,\* (105, 224), (43, 93), 30, (113, 114), (206, 214, 218), (82, 103), (177, 196, 225), (197, 212), (81, 100, 217), (165, 167, 215), (42, 83), (40, 41, 158, 168, 187, 219), 44, (84, 202), (50, 209, 208), 199, 210, 188, 190, (174, 191, 195, 204), (25, 172),\*\* (166, 169, 180), (79, 175), 189, 203, 178, (163, 204, 230), (78, 80, 160).

*Chemistry*.—13, 211, 24, 43,\* 37, 205, (27, 40, 101), 45, (10, 42), 189, (97, 146), (3, 34, 41, 194), 12, (4, 20, 197), (44, 200), 188,\*\* (15, 187), (11, 50), (17, 30), (196, 199).

*Physiology and Hygiene*.—226, (51, 224), 225, 129, (66, 133, 206),\* (25, 56, 105, 162), (218, 227, 228), 202, 58, 55, (65, 98, 103, 229), (12, 60), (54, 107), (15, 156, 159), (100, 101, 130, 158, 177), (213, 217), (81, 168), (2, 106, 163, 207, 216, 219, 230), 210, (89, 125, 178, 212), (82, 127, 166), (62, 96, 148, 163, 175), (114, 146, 214), 169, (83, 92, 160, 184), (157, 208), (64, 104, 112, 154, 164), (87, 128, 149, 151, 204), (53, 61, 90, 172, 203, 215, 232),\*\* (10, 205), (99, 102, 111, 126), (155), (22, 52, 85, 45), (59, 71), (64, 70, 86, 108, 118, 134, 176, 180), 91, (75, 116, 136, 174, 231), (57, 72, 79, 113, 135, 179, 181).

*Physics*.—(8, 19), (154, 157), 13, 155,\* 66, 26, 24, 12, 9, 161, 97,\*\* (18, 23), 29, 205, (6, 14).

*Drawing*.—13,\* 19, 46, 23, 14, 8, 51, (24, 32), 209, (9, 33, 43), 141, 218, (12, 112), (17, 29, 36, 42, 26, 21, 11,\*\* (38, 55, 113, 140, (4, 37), (15, ), 30, 16, 35, (2, 6, 20, 27, 28, 34, 39, 45, 47).



# Passed the University Examinations.

SESSION 1895-96.

## FACULTY OF LAW.

PASSED FOR THE DEGREE OF B.C.L.

Robert Thomas Mullin, Leitchfield, Pontiac, Que.  
Louis Boyer, B.A. (Laval), Montreal  
Edouard Surveyer, B.A. (Laval), Montreal  
William Gamble, B.A., Lachine, Q

Albert C. Hanson, Barnston, Q  
William Donahue, B.A., Farnham, Q  
R  n   Pothier Doucet, Montreal  
Charles D. White, Sherbrooke, Q  
Victor Evelyn Mitchell, London, Eng.

## FACULTY OF MEDICINE.

PASSED FOR THE DEGREE OF M.D., C.M.

(Arranged alphabetically).

Archibald, E. W., B.A., Montreal  
Argue, J. F., Carp, Ont  
Ault, C. R., Montreal  
Bonnell, S., Halifax, N.S  
Brathwaite, J. M., Barbadoes, W.I  
Brunelle, P., Lowell, Mass  
Carron, F. B., Brockville, Ont  
Church, C. H., Montreal  
Church, H. M., Montreal  
Churchill, J. L., B.A., Lockport, N.S  
Colquhoun, P., B.A., Montreal  
Corbett, F. A. F., B.A., Parrsboro, N.S  
Craig, R. H., Montreal  
Crocket, A. P., Fredericton, N.B  
Deacon, G. R., Stratford, Ont  
Dewar, J. E., Glen Sandfield, Ont  
Donahoe, M., Cardigan Bridge, P.E.I  
Drum, L., B.A., Quebec, Que  
Duckett, F. J., Montreal  
Elliott, F. B., Mayfair, Ont  
Ellis, G. H., Dundela, Ont  
Ewan, R. B., Montreal  
Ferguson, J. A., Smith's Falls, Ont  
Findlay, C., Hamilton, Ont  
Fish, E. C., Newcastle, N.B  
Fisk, W. M., Abbotsford, Que  
Fraser, A. D., Breadalbane, Ont  
Fraser, H. B., B.A., Westmeath, Ont  
Foss, A. F., Sherbrooke, Que  
Goltzman, A., Montreal  
Grant, A. J., Pembroke, Ont  
Grant, D., Pictou, N.S  
Hartin, G., Bell's Corners, Ont  
Healy, D. J., Toronto, Ont  
Hogan, E. V., B.A., Weymouth, N.S  
Howell, W. B., Montreal  
Hughson, E. R., Blenheim, Ont  
Irvine, A. D., Westmount, Que  
Johnston, F. E. L., Delaware, Ont  
Keith, H. W., Havelock, N.B  
Kelly, J. K., Almonte, Ont  
Kemp, H. G., Brighton, Ont  
Kendrick, W. N., Austin, Minn., U.S.A  
Lambly, W. D., Inverness, Que  
Lauder, S. E., Durham, Ont

Lee, F. J., Port Hope, Ont  
Leslie, P. G., Montreal  
Lynch, D. P., Chapleau, Que  
Martin, R. H., Chatham, Ont  
Mason, R., Dalesville, Que  
Mitchell, R. W., B.A., Montreal  
Moffatt, W. A., Ormstown, Que  
Moles, E. B., Arnprior, Ont  
Morse, L. R., B.A., Lawrencetown, N.S  
Mowatt, W., B.A., Montreal  
Macartney, F. W., Montreal  
Macaulay, J. J. F., River Dennis, N.S  
Macpherson, D., Montreal  
MacTaggart, D. D., B.A., Montreal  
McArthur, A. W., Williamstown, O  
McDonald, H. K., Pictou, N.S  
McEwen, D., St. Elmo, Ont  
McGannon, A. V., Brockville, Ont  
Patrick, D., Montreal  
Prescott, A. H., Queensbury, N.B  
Robertson, W. A. T., Howick, Que  
Robins, G. D., B.A., Montreal  
Ross, R. O., B.A., Rossville, N.S  
Ryan, J. P., Portage La Prairie, Man  
Ryan, E. J., St. Kitts, W.I  
Secord, J. H., Summerside, P.E.I  
Smellie, W., Huntingdon, Que  
Shaw, R. B., Cove Head, P.E.I  
Slack, T. J., Waterloo, Que  
Smith, S. R. B., Brighton, Ont  
Smith, R. E. G., B.A., Woodstock, N.B  
Smyth, W. H., B.A., Montreal  
Spearman, F. S., Hemmingford, Que  
Stackhouse, O. C. S., Lachute, Que  
Staples, C. A., B.A., Stillwater, Minn  
Steeves, C. P., B.A., Lr. Coverdale, N.B  
Sutherland, J. A., River John, N.S  
Tees, J., B.A., Montreal  
Tetreau, T., Lawrence, Mass  
Thompson, F. L., Perth, Ont  
Tupper, T. S., Fredericton, N.B  
Warren, J. F., Harper, Ont  
Wheeler, F. H., Florenceville, N.B  
White, R., Pembroke, Ont  
Wood, W. S., Faribault, Minn., U.S.A



## FACULTY OF ARTS.

BACHELORS OF ARTS PROCEEDING TO THE DEGREE OF M.A. IN COURSE

TORY, REV. HENRY M., B.A.  
 DERICK, CARRIE M., B.A.  
 HICKSON, JOSEPH W. A., B.A. (in absentia)  
 WALLER, REV. C. CAMERON, B.A.  
 INTERNOSCIA, JEROME, B.A.

PASSED FOR THE DEGREE OF B.A

*In Honours.*

(Alphabetically arranged.)

## MCGILL COLLEGE

*First Rank.*—BOTTERELL, FLORENCE A.

CAMPBELL, GEO. A.  
 FERGUSON, WM. S.  
 FRASER, H. ALICE.  
 HAMMOND, ELIZABETH A.  
 HURST, I. ETHEL.  
 HUTCHINSON, MARGARET.  
 LENNON, WALTER S.  
 LOCKE, WINIFRED A.  
 MACPHAIL, JEANNETTA C.  
 MITCHELL, KATHARINE R.  
 NICHOLS, AMY W.  
 PITCHER, WINONA J.  
 ROBERTSON, JOHN C.  
 SAUNDERS, FRANK C.  
 SCOTT, ARTHUR P.  
 SMILEY, FRANCIS C.

*Second Rank.*—POLLOCK, THOS. J.*Ordinary B.A.*

(In order of merit.)

## MCGILL COLLEGE.

*Class I.*—MOLSON, KENNETH.

ROSS, HERBERT.  
 PATERSON, W. FREDERICK.

*Class II.*—SCRINGER, J. TUDOR.

|                    |          |
|--------------------|----------|
| HOWELL, ARCH. R.   | } equal. |
| ST. JAMES, LEAH.   |          |
| WATSON, MONA T.    |          |
| COBURN, DAVID N.   |          |
| MCCUAIG, MARY.     |          |
| BROWN, JUSTINE M.  |          |
| DENOON, AGNES H.   | } equal. |
| TURNER, WILLIAM G. |          |
| WATT, J. C.        |          |

*Class III.*—GORDON, ALFRED E.  
 CHALMERS, LOUISE H.  
 McMARTIN, THOS. A.  
 VAUDRY, M. OLIVE.  
 YOUNG, STEPHEN.

---

PASSED THE INTERMEDIATE EXAMINATION.

## MCGILL COLLEGE.

*Class I.*—MUNN, D. WALTER.

|                    |          |
|--------------------|----------|
| CARR, MERIEL       | } equal. |
| PATERSON, ROBT. C. |          |
| BROOKS, HARRIET.   |          |
| DUFF, ALECK H.     |          |
| PATERSON, E. R.    |          |

*Class II.*—BOURKE-WRIGHT, K. M. H.

|                        |          |
|------------------------|----------|
| TURNER, H. H.          |          |
| GILDAY, ARCH. L. C.    | } equal. |
| MEYER, J. B.           |          |
| BRUCE, J. C.           |          |
| HEINE, M. C.           |          |
| LENEY, JOHN M.         |          |
| CAMPBELL, J. AUG. E.   |          |
| SHAW, A. LOUISE.       |          |
| MCCONNELL, R. ERNEST.  |          |
| WALKER, LAURA F. M.    |          |
| THOMPSON, J. R.        |          |
| CAMERON, FRANCES M. T. |          |
| GARDNER, WM. A.        |          |
| LEET, MERRICK A.       |          |
| MCGREGOR, JAS. ALBERT. |          |
| TURNER, W. D.          |          |
| CODD, GRACE LINDSAY.   |          |

WORTH, FULTON J.

ROSS, W. WALTER.

*Class III.*—TARLTON, B. B.

VINEBERG, ABRAHAM.

BISHOP, WM. GORDON.

DALGLEISH, ROBT. W.

PEARSON, KATIE C.

GRACE, ARCHIBALD.

KNEEN, GRACE A.

JORDAN, FLORENCE M.

MCLEOD, ARCH. H.

COLBY, JOHN C. (s)

COSTIGAN, JOHN WM. (s)

EVANS, JOHN HENRY (s)

MACLAREN, ARCH. H. (s)

PLACE, EDSON G. (s)

PRUDHAM, W. W. (s)

REYNOLDS, M. EDNA. (s)

ROSS, ARTHUR B. (s)

SHIP, MOSES. (s)

THOMAS, J. WOLFERSTAN (s)

TODD, J. L. (s)

#### MORRIN COLLEGE.

*Class II.*—Seifert. *Class III.*—Meiklejohn (s), Stuart (s).

(s) *With Supplemental in one subject (arranged alphabetically).*

#### FACULTY OF APPLIED SCIENCE.

ADMITTED TO THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

(*Ad eundem.*)

John Taylor Farmer, B.Sc., Liverpool, England.

George Harwood Frost, M.E., Plainfield, N.J., U.S.A.

David Pearce Penhallow, B.Sc., Montreal.

ADMITTED TO THE DEGREE OF MASTER OF APPLIED SCIENCE.

(*In Course.*)

Howard Turner Barnes, B.A.Sc., Montreal.

David Pearce Penhallow, B.A.Sc., Montreal.

ADMITTED TO THE DEGREE OF MASTER OF ENGINEERING.

(*In Course.*)

Samuel Fortier, B.A.Sc., Logan, Utah, U.S.A.

## PASSED FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

(In Order of Merit.)

## CIVIL ENGINEERING.

George Gray Hare, St. John, N.B.  
 Harry Ernest Huestis, Halifax, N.S.  
 Hamilton McMurray Killaly, B.A., Morrisburg, Ont.  
 Carl Reinhardt, Montreal.  
 Theophile Denis, Montreal.  
 William Forrest Angus, B.A.Sc., Montreal.  
 Alexander Ritchie Dufresne, Ottawa, Ont.

## ELECTRICAL ENGINEERING.

Charles Harvey Wright, Renfrew, Ont.  
 Harry Alexander Chase, Kentville, N.S. } equal.  
 William Currie, B.A.Sc., Montreal.  
 Homer Morton Jaquays, B.A., Montreal.  
 William Norton Cunningham, B.A.Sc., Montreal.  
 Henry Richard Trenholme, Montreal.  
 Stewart Fleming Rutherford, Montreal.

## MECHANICAL ENGINEERING.

James Lester Willis Gill, Little York, P.E.I.  
 Francis Edward Courtice, Port Perry, Ont.  
 John William Hunter, Kingston Station, Ont.  
 Thomas Frederick Kenny, Ottawa, Ont.  
 Ernest Randolph Clarke, Stratford, Ont.  
 Henry Arthur Bayfield, Charlottetown, P.E.I.  
 George Alexander Walkem, Kingston, Ont.  
 Gordon Scott Rutherford, Montreal.  
 William McDougall, Ormstown, Que. } Aegrotant.  
 Albert Edward Smail, Montreal.

## MINING ENGINEERING.

Robert Holden Stewart, Montreal.  
 Joseph Samuel Raoul Green, Montreal.  
 Forest Rutherford, Montreal.  
 William Morton Webb, Petrolia, Ont. } equal.  
 Horace Wilberforce Mussen, Aurora, Ont.

## CHEMISTRY.

Arthur McCallum, Maxwell, Ont.  
 William Stule Johnson, Clapham, Que.

## FACULTY OF VETERINARY SCIENCE.

PASSED FOR THE DEGREE OF D.V.S.

Craik, J. E.  
 Dell, H. H.  
 Greer, J.  
 Higgins, C. H.

Kee, F. N.  
 McCarry, J. J.  
 McNider, S.

Morris, E. H.  
 Ness, J. A.  
 Richards, S. C.

# Scholarships and Exhibitions.

SESSION 1895-96.

FACULTY OF ARTS.

## I. SCHOLARSHIPS (Tenable for two years).

| Year of Award. | Names of Scholars.   | Subjects of Examination. | Annual Value. | Founder or Donor.   |
|----------------|----------------------|--------------------------|---------------|---------------------|
| 1894           | Robertson, Jno. C.   | Mathematics.             | \$125         | W. C. McDonald.     |
| 1894           | Hutchinson, Margaret | Mathematics.             | 125           | Donalda Fund.       |
| 1894           | Scott, Arthur        | Nat. Science.            | 125           | W. C. McDonald.     |
| 1894           | Ferguson, Wm. S.     | Class. & Mod. Lang       | 120           | Chas. Alexander.    |
| 1894           | Saunders, Frank C.   | Class. & Mod. Lang       | 120           | Miss Barbara Scott. |
| 1895           | Mackay, Malcolm      | Mathematics.             | 125           | W. C. McDonald.     |
| 1895           | Cameron, Mary T.     | Mathematics.             | 125           | Sir Donald Smith.   |
| 1895           | Saxe, John G.        | Nat. Science.            | 125           | W. C. McDonald.     |
| 1895           | Ker, R. Harold       | Class. & Mod. Lang       | 125           | W. C. McDonald.     |
| 1895           | Macmillan, T. R.     | Class. & Mod. Lang       | 125           | W. C. McDonald.     |

## II. EXHIBITIONS (Tenable for one year).

| NAMES OF EXHIBITIONERS. | Academic Year. | Annual Value.        | Founder or Donor.  |
|-------------------------|----------------|----------------------|--------------------|
| Brooks, Harriet         | Second         | \$100 & free tuition | Sir Donald Smith.  |
| Gardner, Wm. A.         | "              | 125                  | George Hague.      |
| Dalgleish, R. W.        | "              | 125                  | W. C. McDonald.    |
| Munn, D. Walter         | "              | 125                  | W. C. McDonald.    |
| Robertson, Lemuel       | First          | 125                  | W. C. McDonald.    |
| Edward, Arch. T.        | "              | 125                  | W. C. McDonald.    |
| Brown, Walter G.        | "              | 100                  | Major Hiram Mills. |
| Bruce, Guy O. T.        | "              | 100                  | Major Hiram Mills. |
| Ferguson, Colin C.      | "              | 100                  | Major Hiram Mills. |
| McDonald, P. Alex.      | "              | 90                   | Mrs. Jane Redpath. |
| Potter, Lucy E.         | "              | 120                  | Sir Donald Smith.  |



# Prizes, Honours and Standing.

SESSION 1895-96.

## FACULTY OF LAW.

### THIRD YEAR.

#### GRADUATING CLASS.

Robert Thomas Mullin, First Rank Honours and Elizabeth Torrance Gold Medal.

Louis Boyer, B.A., Laval, First Rank Honours and first prize of \$50.

Edouard Surveyer, B.A., Laval, First Rank Honours and prize of \$25.

William Gamble, B.A., First Rank Honours and prize for Thesis.

### SECOND YEAR.

Joseph Armitage Ewing, First Rank General Standing and prize of \$50.

Francis J. Laverty, First Rank General Standing and prize of \$25.

W. Oswald Smyth, First Rank General Standing.

A. W. Kneeland, First Rank General Standing.

G. H. A. Montgomery, First Rank General Standing.

#### PASSED SESSIONAL EXAMINATIONS.

Ewing, Laverty, Smyth, Kneeland, Montgomery, Mansur, Dickson, Stewart, Armstrong, Cook, Jasmin, Brossoit, Bond, Bissonnet, Cole, Boyd, Bickerdike, Duclos.

### FIRST YEAR.

E. Edwin Howard, First Rank General Standing and Scholarship of \$100.

Charles Iles, First Rank General Standing and prize of \$50.

Arthur Burnet, non-resident Scholarship \$100.

Reginald H. Rogers, prize of \$25.

#### PASSED THE SESSIONAL EXAMINATION.

Howard, Iles, Burnet, Rogers, Marler, Kennedy, Hickson, Clay, Champoux, Elliot, Hingston, Semple.

#### STANDING IN THE CLASSES.

#### ROMAN LAW.—

N. W. TRENHOLME, Q.C., D.C.L., Dean, Examiner.

*Third Year.*—Mitchell and Surveyer, equal; Doucet; Hanson and Mullin and White, equal; Gamble, Boyer, Donahue.

*Second Year.*—Lavery and Smyth, equal ; Montgomery ; Kneeland and Cook, equal ; Mansur, Jasmin, Cole, Ewing ; Bond and Bickerdike and Brossoit, equal ; Boyd, Armstrong, Bissonnet, Stewart, Dickson, Duclos.

*First Year.*—Howard, Iles, Kennedy, Marler, Burnet, Rogers, Hickson ; Hingston and Champoux and Semple, equal.

#### OBLIGATIONS.—

Dean TRENHOLME, Examiner.

*Second Year.*—Cook and Ewing and Kneeland, equal ; Stewart ; Mansur and Lavery, equal ; Montgomery, Armstrong ; Brossoit and Dickson, equal ; Jasmin, Boyd, Cole, Bissonnet ; Duclos and Smyth, equal ; Bond, Bickerdike.

*First Year.*—Clay, Rogers, Iles, Burnet, Marler, Aylmer, Kennedy, Elliott, Semple ; Champoux and Hickson, equal ; Howard, *ager. s.*

#### LAW OF REAL ESTATE.—

PROFESSOR HON. J. S. C. WURTELE, Examiner.

*Second Year.*—Albert W. Kneeland, Wm. Oswald Smyth, Numa Ed. Brossoit, G. H. A. Montgomery, Alex. McN. Stewart, E. H. T. Dickson, Charles H. Mansur, Francis J. Lavery, Joseph Armitage Ewing, W. L. Bond, Frank A. C. Bickerdike, Edgar N. Armstrong, J. E. A. Bissonnet, Leslie H. Boyd, F. Minden Cole, Pierre S. Jasmin, J. W. Cook, Arnold W. Duclos.

*First Year.*—Howard, Clay, Burnet, Iles, Rogers, Honan, Hickson, Hingston, Marler, Sinn, Kennedy, Semple, Elliott, Champoux.

#### COMMERCIAL LAW (JOINT STOCK COMPANIES).—

PROF. L. H. DAVIDSON, Q.C., D.C.L., Examiner.

*Third Year.*—Mitchell, Donahue, Mullin ; Gamble and Doucet, equal ; Hanson and Boyer, equal ; White, Surveyer.

*Second Year.*—Ewing, Lavery, Kneeland, Cook, Bond ; Stewart and Mansur and Montgomery and Smyth, equal ; Armstrong, Bickerdike, Bissonnet, Dickson, Boyd Duclos, Jasmin, Cole, Brossoit.

*First Year.*—Howard, Clay, Iles, Hickson, Rogers, Burnet, Kennedy, Hingston, Marler.

## LAW OF EVIDENCE.—

PROF. DAVIDSON, Acting Dean, Examiner.

*Third Year.*—Doucet ; Mullin and Surveyer, equal ; Hanson, Donahue, Gamble, Boyer, White.

*Second Year.*—Ewing ; Bond and Lavery and Smyth, equal ; Boyd ; Brossoit and Cole, equal ; Kneeland and Mansur, equal ; Jasmin, Bickerdike, Montgomery ; Armstrong and Stewart, equal ; Dickson and Duclos, equal ; Bissonnet, Cole.

*First Year.*—Clay, Howard, Rogers, Hickson, Honan, Iles, Burnett, Elliott ; Hingston and Marler, equal ; Kennedy, Champoux, Semple.

## CRIMINAL LAW.—

PROF. DAVIDSON, Acting Dean, Examiner.

*Third Year.*—Boyer, Doucet, Mullin, Gamble, Donahue ; Hanson and Surveyer, equal ; White.

*Second Year.*—Ewing, Smyth, Lavery ; Montgomery and Brossoit, equal ; Kneeland, Mansur, Cook, Jasmin, Armstrong, Bickerdike, Bond, Duclos ; Dickson and Bissonnet, equal ; Boyd ; Stewart and Cole, equal.

*First Year.*—Rogers, Marler, Iles, Burnet, Howard, Semple, Hickson ; Hingston and Kennedy, equal ; Honan and Champoux, equal ; Sinn and Elliott, equal.

## SURETYSHIP AND PLEDGE.—

PROF. C. A. GEOFFRION, Q.C., D.C.L.

LECTURER AIME GEOFFRION, B.C.L., Examiner.

*Third Year.*—Boyer, Gamble, Surveyer, Hanson, Mullin, White, Doucet, Donahue.

*Second Year.*—Montgomery, Smyth, Ewing ; Cook and Jasmin and Dickson, equal ; Lavery and Mansur, equal ; Kneeland and Stewart, equal ; Duclos, Bond, Armstrong, Cole ; Brossoit and Bissonnet, equal ; Bickerdike, Boyd.

*First Year.*—Rogers and Howard, equal ; Iles, Kennedy, Clay, Elliott ; Honan and Champoux, equal ; Burnet, Hingston ; Hickson and Marler, equal ; Semple and Sinn, equal.

## CONSTITUTIONAL LAW.—

PROF. ARCH. MCGOUN, M.A., B.C.L., Examiner.

*Third Year.*—Boyer, Surveyer, Mullin, Doucet, Donahue, Gamble, Hanson.

*Second Year.*—Lavery, Cole, Dickson; Ewing and Montgomery and Smyth, equal; Mansur; Jasmin and Kneeland equal; Armstrong and Brossoit, equal; Bissonnet, Stewart, Bickerdike, Cook; Boyd and Duclos, equal; Bond.

*First Year.*—Marler, Iles, Burnet; Rogers and Howard, equal; Clay, Hingston, Kennedy; Hickson and Semple, equal; Honan, Elliott, Sinn, Champoux.

## BIBLIOGRAPHY OF THE LAW OF LOWER CANADA.—

PROF. ARCH. MCGOUN, M.A., B.C.L., Examiner.

*Third Year.*—Mitchell and Mullin, equal; Boyer, Gamble and Hanson, equal; Donahue, White, Doucet, Surveyer.

*Second Year.*—Ewing, Kneeland, Lavery, Montgomery, Smyth, Brossoit, Cole, Bissonnet, Boyd, Jasmin, Stewart, Armstrong, Cook; Bond and Dickson, equal; Bickerdike, Mansur, Duclos.

*First Year.*—Clay, Burnet, Howard, Iles, Champoux, Rogers, Hickson, Elliott, and Honan, equal; Pelland, Marler, Semple.

## CIVIL LAW—PRESCRIPTION.—

PROF. FORTIN, LL.L., B.C.L., Examiner.

*Third Year.*—Mitchell, Surveyer, Boyer, Mullin, Donahue, Doucet, White, Gamble, Hanson.

*Second Year.*—Ewing, Montgomery; Stewart and Smyth, equal; Lavery; Mansur and Boyd, equal; Brossoit, Kneeland, Cook, Cole, Bissonnet; Jasmin and Armstrong, equal; Dickson, Bickerdike, Duclos, Bond, Honan.

*First Year.*—Iles, Howard, Burnet, Clay, Kennedy, Champoux, Marler, Rogers, Elliott, Hickson, Pelland, Hingston, Semple.

## MUNICIPAL LAW.—

PROF. FORTIN, Examiner.

*Third Year.*—Surveyer, Gamble, Mullin, Hanson, Boyer, Donahue, Doucet.

*Second Year.*—Dickson, Mansur, Ewing, Smyth, Bissonnet, Kneeland, Laverty, Armstrong, Cole, Jasmin, Stewart, Brossoit ; Bond and Duclos, equal ; Cook, Boyd, Montgomery, Bickerdike.

*First Year.*—Howard, Iles, Rogers, Kennedy ; Hickson and Marler, equal ; Burnet ; Semple and Sinn, equal ; Elliott, Honan, Champoux, Hingston.

## REGISTRATION OF REAL RIGHTS.—

PROF. W. DE M. MARLER, M.A., Examiner.

*Third Year.*—Boyer and Mullin and Hanson, equal ; Doucet, White ; Donahue and Gamble, equal ; Surveyer.

*Second Year.*—Armstrong, Kneeland, Smyth ; Cook and Laverty and Mansur, equal ; Ewing, Bond, Bissonnet ; Brossoit and Montgomery and Dickson, equal ; Stewart ; Boyd and Cole and Duclos and Jasmin, equal.

*First Year.*—Howard, Kennedy, Elliott ; Clay and Marler and Burnet, equal ; Rogers, Iles ; Hickson and Hingston, equal ; Champoux and Honan and Semple, equal.

## CIVIL LAW, LEASE AND HIRE.—

PROF. HON. CHARLES J. DOHERTY, D.C.L., Examiner.

*Third Year.*—Boyer, Hanson, Donahue, Mullin, Surveyer, Gamble, White, Doucet.

*Second Year.*—Ewing, Dickson, Smyth, Laverty, Kneeland ; Bond and Montgomery, equal ; Mansur ; Cook and Duclos, equal ; Armstrong and Stewart, equal ; Bissonnet ; Boyd and Cole and Jasmin, equal ; Bickerdike, Brossoit.

*First Year.*—Howard ; Clay and Kennedy, equal ; Rogers, Burnet, Champoux, Iles ; Hingston and Hickson, equal ; Marler, Honan, Elliott, Sinn.

## LAW OF PATENTS AND TRADE MARKS.—

PROF. HARRY ABBOTT, Q.C., Examiner.

*Third Year.*—Surveyer and Mullin, equal ; Gamble ; Donahue and Doucet, equal ; Hanson, Boyer, White.

*Second Year.*—Ewing and Smyth, equal ; Laverty, Jasmin ; Bond and Dickson, equal ; Bissonnet and Boyd, equal ; Stewart ; Brossoit and Cook and Montgomery, equal ; Kneeland and Mansur, equal ; Cole ; Armstrong and Bickerdike, equal ; Duclos.

*First Year.*—Clay and Hickson, equal ; Howard and Rogers, equal ; Burnett, Iles, Marler, Hingston, Elliott, Sinn, Semple, Champoux, Honan.



## INTERNATIONAL LAW.—

PROF. EUGENE LAFLEUR, B.A., B.C.L., Examiner.

*Third Year.*—Gamble, Boyer, Mullin; Hanson and Surveyer and White, equal; Doucet, Donahue.

*Second Year.*—Lavery, Ewing, Montgomery, Dickson, Kneeland, Smyth; Bond and Cole, equal; Duclos and Stewart, equal; Jasmin, Mansur, Armstrong, Bissonnet, Bickerdike, Cook, Brossoit, Boyd.

*First Year.*—Howard, Clay, Burnet, Iles; Hingston and Rogers, equal; Marler, Hickson, Kennedy, Champoux, Honan, Semple, Elliott.

## HISTORY OF ROMAN LAW.—

LECTURER, P. C. RYAN, B.C.L., Examiner.

*First Year.*—Howard; Iles and Clay, equal; Burnet, Marler, Hickson; Rogers and Semple, equal; Kennedy, Hingston, Honan; Sinn and Elliott, equal.

## CIVIL PROCEDURE.—

LECTURER RYAN, Examiner.

*Second Year.*—Lavery, Dickson, Ewing; Smyth and Montgomery, equal; Stewart, Boyd, Cole; Brossoit and Jasmin, equal; Kneeland and Bissonnet, equal; Armstrong, Mansur, Duclos, Bond, Cook, Bickerdike.

*First Year.*—Iles, Howard, Burnet; Champoux and Kennedy, equal; Marler; Honan and Elliot, equal; Hickson, Semple, Rogers, Sinn, Hingston.

## FACULTY OF MEDICINE.

## MEDALS AND PRIZES.

THE HOLMES MEDAL is awarded to GEORGE DOUGALL ROBINS, B.A., of Montreal, Que.

THE FINAL PRIZE is awarded to GEORGE REGINALD DEACON, of Stratford, Ont.

THE CLEMASHA PRIZE is awarded to ROBERT OSWALD ROSS, B.A., of Ross-ville, N.S.

THE CLINICAL CHEMISTRY PRIZE is awarded to FREDERICK BURKE CARRON, of Brockville, Ont.

THE SUTHERLAND MEDAL is awarded to ARTHUR LYALL MCMURTRY, of Bowmanville, Ont.

THE SECOND YEAR PRIZE is awarded to WILLIAM OLIVER ROSE, of Lakeville, P.E.I.

THE SENIOR ANATOMY PRIZE is awarded to WILLIAM OLIVER ROSE, of Lakeville, P.E.I.

THE FIRST YEAR PRIZE is awarded to ALVAH HOVEY GORDON, of St. John, N.B.

THE JUNIOR ANATOMY PRIZE is awarded to LAUGHLIN GEORGE CAMERON, of Ottawa, Ont.

THE BOTANY PRIZE is awarded to THOMAS TURNBULL, of Stratford, Ont.

THE ZOOLOGY PRIZE is awarded to ALVAH HOVEY GORDON, of St. John, N.B.

#### HONORS IN THE FINAL BRANCHES.

- |                           |                          |
|---------------------------|--------------------------|
| 1 Robins, G. D., B.A.     | 10 Fisk, W. M.           |
| 2 Deacon, G. R.           | 11 McDonald, H. K.       |
| 3 Kendrick, W. N.         | 12 Mitchell, R. W., B.A. |
| 4 Archibald, E. W., B.A.  | 13 Smith, R. E. G., B.A. |
| 5 Secord, J. H.           | 14 Slack, T. J.          |
| 6 Carron, F. B.           | 15 Lynch, D. P.          |
| 7 Moffatt, W. A.          | 16 Ross, R. O., B.A.     |
| 8 Argue, J. F.            | 17 Shaw, R. B.           |
| 9 Corbett, F. A. F., B.A. |                          |

#### HONORS IN SECOND YEAR SUBJECTS.

- |                            |                       |
|----------------------------|-----------------------|
| 1 Rose, W. O. (Prize-man). | 10 Patterson, F. P.   |
| 2 Cushing, H. B., B.A.     | 11 McLeod, J.         |
| 3 Smith, A. M., B.A.       | 12 Bell, J.           |
| 4 Gillies, B. W. D.        | 13 Covert, A. M.      |
| 5 Schwartz, H. J.          | 14 Dalpé, W. H., B.A. |
| 6 Grace, N.                | 15 McMurtry, A. L.    |
| 7 Duncan, R. G.            | 16 Peters, C. A.      |
| 8 Banfill, S. A.           | 17 Davidson, C.       |
| 9 Powers, M., B.A.         |                       |

THE FOLLOWING STUDENTS OF THE SECOND YEAR HAVE PASSED IN ALL OF THE SUBJECTS OF THE YEAR, VIZ:—ANATOMY, PRACTICAL ANATOMY, CHEMISTRY, PRACTICAL CHEMISTRY, PHYSIOLOGY, PRACTICAL PHYSIOLOGY, HISTOLOGY and MATERIA MEDICA.

- |                     |                       |                      |
|---------------------|-----------------------|----------------------|
| Banfill, S. A.      | Blackett, J. W., B.A. | Delmage, F. W., B.A. |
| Barclay, James      | Brown, C. L.          | Dalpé, W. H., B.A.   |
| Barlow, W. L., B.A. | Campbell, I. G.       | Darche, J. A.        |
| Bearman, G. P.      | Corbet, G. G.         | Davidson, C.         |
| Bayfield, G. E.     | Covert, A. M.         | Deane, R. B.         |
| Bell, J.            | Cushing, H. B., B.A.  | Dickson, S. M., B.A. |

|                     |                       |                    |
|---------------------|-----------------------|--------------------|
| Doyle, J. J.        | Lynch, W. W.          | Peters, C. A.      |
| Duncan, R. G.       | Lyster, H. F.         | Pittis, H.         |
| Duval, J. L.        | Mooney, M. J.         | Powers, M., B.A.   |
| Eberts, E. M. von   | Myers, D. A.          | Ritchie, A. A.     |
| Finnie, J. H.       | Macaulay, J. F.       | Robertson, A. R.   |
| Forbes, A. M.       | McDougall, G. P.      | Rose, W. O.        |
| Fraser, F. C., B.A. | McDonald, D. J.       | Scanlan, M. H.     |
| Gilday, F. W.       | McElroy, A. S.        | Schwartz, H. J.    |
| Gladman, E. A.      | McKinnon, F. W.       | Sihler, W. F.      |
| Gillies, B. W. D.   | McLean, J. R., B.A.   | Smith, A. M., B.A. |
| Grace, N.           | McLennan, P. A.       | Soden, A. E.       |
| Green, F. W.        | McLeod, J.            | Telford, R.,       |
| Harvey, F. W., B.A. | McMurtry, A. L.       | Thomas, H. W.      |
| Hayden, E. W., B.A. | McRae, W. R.          | Tiffany, G. S.     |
| Houston, J. C.,     | Ogilvy, C., B.A.      | Tozer, F. W.       |
| Hudson, H. P.       | Outhouse, J. S., B.A. | Trites, C. B.      |
| Jackson, F. S.      | O'Shaughnessey, L. J. | West, J., M.A.     |
| Johnston, J. A.     | Pallister, W. T.      | Whittan, D. A.     |
| Lang, A. A. J.      | Palmer, A. J.         | Wilson, F. W. E.   |
| Lockary, J. L.      | Patterson, F. P.      |                    |

## HONORS IN FIRST YEAR SUBJECTS.

|                              |                            |
|------------------------------|----------------------------|
| 1 Gordon, A. H. (Prize-man). | 14 { Doull, A. E.          |
| 2 O'Brien, J. R., B.A.       | 14 { Fitzgerald, C. T.     |
| 3 Sutherland, W. H.          | 16 Gray, C. F. A.          |
| 4 { Drier, N. E.             | 17 Casselman, P. C.        |
| 4 { Nicholson, F. J., B.A.   | 18 McKechnie, W. C.        |
| 6 Murphy, E. F.              | 19 Dyer, E. O., B.A.       |
| 7 McNaughton, F. M. A., B.A. | 20 { Shore, R. A. A., B.A. |
| 8 Burnett, W. B., B.A.       | 20 { Burris, J. S.         |
| 9 Turnbull, T.               | 22 Cummings, W. A.         |
| 10 Tooke, F. T., B.A.        | 23 Whillans, H. A.         |
| 11 Galbraith, W. S.          | 24 McNiece, T.             |
| 12 Levy, A., B.A.            | 25 { Jones, D. C.          |
| 13 Cram, W. J.               | 25 { Wilkins, W. A.        |

THE FOLLOWING STUDENTS HAVE PASSED IN ALL SUBJECTS OF THE FIRST YEAR, COMPRISING :—ANATOMY, PRACTICAL ANATOMY, CHEMISTRY, PRACTICAL CHEMISTRY, PHYSIOLOGY, PRACTICAL PHYSIOLOGY, BOTANY (or ZOOLOGY), PRACTICAL HISTOLOGY.

|                |                      |                  |
|----------------|----------------------|------------------|
| Allen, W. C.   | Burnett, W. B., B.A. | Casselman, P. C. |
| Bowles, C. T.  | Burris, J. S.        | Cram, W. J.      |
| Bradley, J. H. | Cameron, L. G.       | Cummings, W. A.  |

|                      |                          |                       |
|----------------------|--------------------------|-----------------------|
| Cunningham, A. A.    | Logie, A. E.             | O'Brien, J. R., B.A.  |
| Cuzner, G.           | Love, R. H.              | Ross, S. A.           |
| Doull, A. E.         | Murphy, E. F.            | Ryan, G. H. W.        |
| Drier, N. E.         | MacDonald, J. S.         | Shore, R. A. A., B.A. |
| Dyer, E. O., B.A.    | MacKenzie, C. A.         | Sutherland, W. H.     |
| Fitzgerald, C. T.    | McDougall, A.            | Thompson, G. H.       |
| Fourney, F. W., B.A. | McKay, J. G.             | Tooke, F. T., B.A.    |
| Galbraith, W. S.     | McKechnie, W. C.         | Turnbull, T.          |
| Gordon, A. H.        | McNally, D. A.           | Whillans, H. A.       |
| Gray, C. F. A.       | McNaughton, F.M.A., B.A. | Wilkins, W. A.        |
| Green, E.            | McNiece, T.              | Witherbee, W. D.      |
| Jones, D. C.         | Nash, A. C.              | Wood, J. H.           |
| Law, R.              | Nicholson, F. J., B.A.   | Woodley, J. W.        |
| Levy, A., B.A.       | Noble, E. C.             |                       |

## FACULTY OF VETERINARY SCIENCE.

### PRIZES.

Veterinary Medicine and Surgery—H. H. Dell.

Anatomy—R. G. Matthew.

Cattle Pathology—H. H. Dell.

Cynology—H. H. Dell.

Pharmacology and Therapeutics—H. H. Dell.

Botany—W. B. Wallis.

Chemistry—B. B. Killam.

Physiology—B. A. Sugden.

For the best general examination in all subjects—Silver Medal—H. H. Dell.

### EXTRA PRIZES.

For the best essay read before the Veterinary Medical Association: 1st—H. H. Dell. 2nd and 3rd prizes are added together, and divided between Messrs. Kee, Higgins and Ness.

For the best essay read before the Society for the Study of Comparative Psychology: 1st—R. G. Matthew. 2nd—H. H. Dell. 3rd—F. W. Kee. The first year prize was won by J. P. Spanton.

Professor Adami's Prize of \$50 for Original Pathological Research, open to Students in the final years in Human and Comparative Medicine. Divided between C. H. Higgins, B.Sc., Comp. Medicine, and Mr. R. H. Martin, Human Medicine, Mr. Higgins' work being on an epizootic of chicken cholera near Montreal.

## FACULTY OF ARTS.

## GRADUATING CLASS.

*B.A. Honours in Mathematics and Natural Philosophy.*

ROBERTSON, JOHN C.—First Rank Honours and Anne Molson Gold Medal.

HUTCHINSON, MARGARET.—First Rank Honours.

*B.A. Honours in Classics.*

HAMMOND, ELIZABETH A.—First Rank Honours and Chapman Gold Medal.

FERGUSON, WILLIAM S.—First Rank Honours.

*B.A. Honours in Geology, Mineralogy and Palæontology.*

SCOTT, ARTHUR P.—First Rank Honours and Logan Gold Medal.

POLLOCK, THOMAS J.—Second Rank Honours.

*B.A. Honours in Mental and Moral Philosophy.*

LENNON, WALTER S.—First Rank Honours and Prince of Wales Gold Medal.

SAUNDERS, FRANK C.—First Rank Honours.

MACPHAIL, JEANETTA.—First Rank Honours.

*B.A. Honours in English Language, Literature and History.*

FRASER, ALICE.—First Rank Honours and Shakespeare Gold Medal.

NICHOLLS, AMY G.—First Rank Honours (Special Prize).

CAMPBELL, GEORGE A.—First Rank Honours.

MITCHELL, KATHARINE R.— } equal ; First Rank Honours.  
PITCHER, WINONA I.— }

HURST, I. ETHEL.—First Rank Honours.

SMILEY, FRANK C.—First Rank Honours.

BOTTERELL, FLORENCE A.—First Rank Honours.

*B.A. Honours in Modern Languages and History.*

LOCKE, WINIFRED.—First Rank Honours and Aberdeen Gold Medal.

*Special Certificate for First Rank General Standing.*

MOLSON, KENNETH.—Special Certificate and Hiram Mills Gold Medal.

PATERSON, W. FREDERICK.—Special Certificate.

ROSS, HERBERT.—Special Certificate.

*New Shakspeare Society's Prize.*

TRENHOLME, NORMAN McL., B.A.



## THIRD YEAR.

- MACKAY, MALCOLM.—First Rank Honours and Prize in Mathematics and Natural Philosophy ; First Rank General Standing.
- CAMERON, MARY T.—First Rank Honours in Mathematics and Natural Philosophy ; First Rank General Standing.
- MACMILLAN (T. R.).—First Rank Honours in Classics ; First Rank General Standing ; Prize in Greek ; Prize in Latin.
- SAXE, JOHN G.—First Rank Honours, and Prize in Mental and Moral Philosophy ; First Rank Honours in Natural Science ; First Rank General Standing ; Prize in Zoology.
- ROSS, ELIZABETH.—First Rank Honours and prize in Mental and Moral Philosophy ; First Rank General Standing.
- CAMPBELL, ROLAND P.—First Rank Honours in Natural Science ; First Rank General Standing.
- ARCHIBALD, SAMUEL.—First Rank Honours and Prize in English Language, Literature and History ; First Rank General Standing ; Prize in English and Rhetoric ; Prize in French.
- YOUNG, LAURA A.—First Rank Honours in Modern Languages and History ; First Rank General Standing ; Prize in Latin ; Prize in French ; Prize in German.
- RUGG, M. ALICE.—First Rank Honours in Modern Languages and History.
- KEE, ROBT. HAROLD.—First Rank Honours in Classics.
- DOULL, ETHEL M.—First Rank Honours and prize in Mental and Moral Philosophy.
- MCLEOD, DONALD M.—First Rank Honours in Natural Science.
- WALBRIDGE, MABEL H.—First Rank Honours in Natural Science.
- HOLDEN, MARGARET L.—First Rank Honours in English Language, Literature and History.
- WYMAN, DANIEL B.—First Rank Honours in Semitic Languages and Literature.
- STEACY, F. W.—Second Rank Honours in Classics.
- GALT, ANNIE PRINCE.—Second Rank Honours in English Language, Literature and History.
- McMASTER, ANDREW R.—Second Rank Honours in English Language, Literature and History.
- SMITH, A. LOUISE.—First Rank General Standing ; Prize in Greek ; Prize in Zoology.
- ROWAT, —.—First Rank General Standing.

## THIRD YEAR.

## PASSED THE SESSIONAL EXAMINATION.

Mackay, Archibald, Saxe, Young, Campbell (Roland); Macmillan and Rowat and Cameron and Smith, equal; Ross (E.), Henderson, Howard, Wyman (D. B.), McBurney (Chas.); Brown and Wyman (N. B.), equal; McLeod; Campbell and Trenholme, equal; Ker and Macfarlane, equal; Doull; Willis and Reynolds, equal; Watters, Macmaster; Armstrong and Ryan, equal; Holden and Walbridge, equal; Russell; McLean and Mallinson and Steacy and Galt and Rugg, equal; Boyce and Johnston and Stevenson, equal; Crack and Ross (A. R.), equal; Moore, Douglas, Ives, McBurney (E. E.), Watson, Stephen.

## SECOND YEAR.

- BROOKS, HARRIET.—(Seaforth Coll. Institute).—First Rank Honours and Prize in Mathematics; First Rank General Standing; Prize in German.
- MUNN, D. WALTER.—(Quebec H. S.).—First Rank Honours in Mathematics; First Rank General Standing Prize; General Standing; Prize in Greek; Prize in French; Prize in German.
- THOMPSON, JAS. RICHARD.—(Sarnia College Institute).—First Rank Honours in Mathematics.
- BRUCE, JOHN C.—(Huntington Academy).—First Rank Honours in Mathematics.
- GARDNER, Wm. A.—(Huntingdon Academy).—First Rank Honours in Mathematics.
- CARR, MURIEL B.—(Girls' High School, St. John, N.B.).—First Rank General Standing; Prize in Latin; Prize in Psychology and Logic; Prize in Modern History.
- PATERSON, C. ROBT.—(Montreal Coll. Inst.).—First Rank General Standing; Prize in Modern History; Prize in Botany.
- PATERSON, EDSON R.—(St. Francis College).—First Rank General Standing; Prize in Latin.
- TURNER, H. H.—(Carleton Place H. S., (Ont).—Prize in Psychology and Logic.
- HEINE, M. C.—(Leal's School, N.Y., U.S.).—Prize in Psychology and Logic.
- WALKER, LAURA F. M.—(Private Tuition).—Prize in Botany.
- CAMERON, FRANCES M. T.—(Trafalgar Institute).—Prize in French.
- KNEEN, GRACE A.—(M. G. H. S.).—Prize in French.

## SECOND YEAR.

## PASSED THE SESSIONAL EXAMINATION.

Munn, Carr, Paterson (R. C.), Brooks, Duff, Paterson (E. R.), Bourke-Wright, Turner (H. H.) ; Gilday and Myer, equal ; Bruce, Heine, Leney, Campbell, Shaw, McConnell, Walker, Thompson, Cameron, Gardner, Leet, McGregor, Turner (W. D.), Codd, Worth, Ross (W. W.), Tarlton, Vineberg, Bishop, Dagleish, Pearson, Grace, Kneen, Jordan, McLeod, Colby (s), Costigan (s), Evans (s), Maclaren (s), Place (s), Prudham (s), Reynolds (s), Ross (A. B.) (s), Ship (s), Thomas (s), Todd (s).

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s.—With supplemental examination in one subject (arranged alphabetically).

## FIRST YEAR.

EDWARD, ARCHIBALD T.—(Montreal Collegiate Institute).—First Rank Honours and Prize in Mathematics ; First Rank General Standing ; Prize in Latin ; Prize in German.

FERGUSON, COLIN C.—(Prince of Wales College, P.E.I.).—First Rank Honours and Prize in Mathematics ; First Rank General Standing ; Coster Memorial Prize.

ROBERTSON, LEMUEL.—First Rank Honours in Mathematics ; First Rank General Standing ; Prize in Greek ; Prize in English ; Prize in Ancient History.

BRUCE, GUY O. T.—(Huntingdon Academy).—First Rank Honours and Prize in Mathematics.

McCLUNG, ROBERT K.—(Hamilton Collegiate Institute).—Second Rank Honours in Mathematics.

HOLIDAY, ANNIE.—(Montreal Collegiate Institute).—First Rank General Standing ; Prize in History ; Prize in French.

McLEOD, J. B.—(Prince of Wales College, P.E.I.).—First Rank General Standing.

POTTER, LUCY E.—(McGill Normal School).—Prize in Greek ; Prize in Latin.

WHITE, E. HAMILTON.—(Abingdon School Montreal).—Prize in Chemistry.

PATCH, FRANK S.—(Montreal High School).—Prize in French.

McGILL, I. WINIFRED.—(Ottawa Collegiate Institute).—Prize in German.

FINLEY, KATHLEEN E.—(Trafalgar Institute).—Prize in French.

## FIRST YEAR.

## PASSED THE SESSIONAL EXAMINATIONS.

Robertson, Edward, Ferguson, McLeod J. B., Holiday, Bruce, McClung, Ellis, White, Patch, Potter, Cotton, Brown, McGill, Goodall, Radford; Duguid and Henderson and Wainwright, equal; King, McDonald, McKenzie, Rice, Scrimger, Keith, Johnson (H.), Finley, Oswald, Reid, Lee, Johnson (R. De L.), Lundie, Parks, Laurie, Hurst, Hardisty, Mathers, Baker (G. H.), Burke (E. A.) (s), Burton (s), Cumming (s), Dixon (s), Kingsbury (s), McDougall (s), Munroe (s), Reynolds (s), Scriver (s), Stewart (s).

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(s) With supplemental examination in one subject arranged alphabetically.

AWARD OF SCHOLARSHIPS, EXHIBITIONS AND CLASSING AT  
ENTRANCE, SEPTEMBER, 1895.

I. THIRD YEAR.—SCHOLARSHIPS (tenable for two years).

*Mathematical Scholarship*.—\*Mackay Malcolm.

“ “ *Donalds Dept.*—†Cameron, Mary T.

*Natural Science Scholarship*.—\*Saxe, John G.

*Classical and Modern Language Scholarship*.—\*Ker, H.; \*Macmillan, T. R.

II. SECOND YEAR.—EXHIBITIONS (tenable for one year).

† (d) Brooks, Harriet, Seaforth Coll. Institute.

§§Gardner, Wm. A., Huntingdon Academy.

\*Dalgleish, R. W., Huntingdon Academy.

\*Munn, D. W., Quebec High School.

III. FIRST YEAR.—HIGHER ENTRANCE AND EXHIBITION EXAMINATION.

*Class I.*—{ \*Robertson, L., Prince of Wales Coll., P.E.I.; Exhibition.

{ \*Edward, A. T., Montreal Coll. Institute, “

\*\*Brown, W. G., Huntingdon Academy, “

{ \*\*Bruce, Guy O. T., Huntingdon Academy, “

{ \*\*Ferguson, Colin C., Prince of Wales Coll., P.E.I., “

††McDonald, P. Alex., Huntingdon Academy, “

† (b) Potter, Lucy E., McGill Normal School, “

‡ Henderson, Ernest H., Huntingdon Academy, Bursary.

*Class II.*—Johnson, R. De L., Montreal Coll. Inst.

Duguid, Robert C., M. H. S.

Millar, W. K., Pembroke H. S.

Stewart, D., Almonte H. S.

*Passed.*—Stuart, James, Huntingdon Academy.

† Annual value, \$125—Donor, Sir Donald Smith.

\* “ “ \$125—Founder, W. C. McDonald, Esq.

§§ “ “ \$125—Donor, George Hague, Esq.

† (a) “ “ \$100 and free tuition—Sir Donald Smith.

† (b) “ “ \$120—Donor, Sir Donald Smith.

\*\* “ “ \$100—Founder, Major Hiram Mills.

†† “ “ \$ 90—Founder, Mrs. Jane Redpath.

“ “ MacDonald Bursary.

## SUPPLEMENTAL EXAMINATIONS.

September to Christmas 1895.

*(a) Supplemental Sessional.*

THIRD YEAR.—Ashdown.

SECOND YEAR.—Moore (Wm.), Stephen, Pinder.  
(St. Francis Coll.)—Watson.FIRST YEAR.—Evans, Steen, Place.  
(Stanstead Coll.)—Edson.*(b) Supplemental in one subject.*SECOND YEAR.—McMaster, Stevenson, Willis, Hinds.  
(St. Francis Coll.)—Crack.  
(Stanstead Coll.)—Du Boyce.

FIRST YEAR.—Dutton, Luttrell, MacLeod, Moore, Stephens, Tarlton, Todd.

## SESSIONAL EXAMINATIONS, 1896.

MCGILL COLLEGE.

*(Partial students are indicated by asterisks).*

GREEK.

B.A. ORDINARY.—*Class I.*—Ferguson, Hammond, Ross, Molson, Turner. *Class II.*—Howell and Scrimger, equal; Coburn. *Class III.*—Brown, Pollock, Chalmers, McMartin, Young.THIRD YEAR.—*Class I.*—MacMillan (*Prize*), Kerr, Smith (A. L.), (*Prize*), Henderson. *Class II.*—Ross; Willis and Wyman (H.B.), equal. *Class III.*—Johnston, Doull, Armstrong, McBurney, McLeod; Campbell (E. M.) and Steacy, equal; Mallinson, McLean, Douglas, Crack, Watson.SECOND YEAR.—*Class I.*—Munn (*Prize*), Meyer; Gilday and Ship, equal; Bourke-Wright and Carr, equal; Brookes. *Class II.*—Gardner and Heine and McLaren and Paterson (E. R.), equal; Costigan and McGregor and Stephens, equal; Paterson (R. C.) and Turner (W. D.), equal; Campbell and McConnell and Place and Ross (W. W.), equal; Bruce and Leet, equal; Cameron and Dalgleish and Kneen, equal. *Class III.*—Leney and Ross (A. B.) and Tarlton and Turner (H. H.) and Worth, equal; Grace and Larmonth and Thompson and Vineberg, equal; Duff and Evans and Reid, equal; Ogilvy (B. A.), Shaw; Bishop and McLeod, equal; Steen, Nunns.FIRST YEAR.—*Class I.*—Robertson (*Prize*), Edward, Ferguson, Brown, Potter (*Prize*). *Class II.*—Wainwright; Bruce and Holiday, equal; Goodall and McLeod (T. B.), equal; Burton, Rice, Patch, Ells. *Class III.*—Keith and Lee, equal; Coton; McClung and Oswald, equal; Duguid and McDonald, equal; Douglas and Lundie and Stewart (D.), equal; Cumming and Johnson (R. D.) and White, equal; McKenzie; Henderson and Millar, equal; Parks; Baker and Dewitt and Mathers, equal; Hurst; Dixon and Munroe, equal; Roberts, Laurie, Hardisty, Mackay.



## LATIN.

B.A. ORDINARY.—*Class I.*—Ferguson and Hammond, equal : Ross, Molson, Turner. *Class II.*—McQuaig, Paterson. *Class III.*—Watson, Gordon, Brown, Denoon, McMartin, St. James, Chalmers, Vaudry.

THIRD YEAR.—*Class I.*—McMillan (*Prize*), Rowat, Howard, Wyman (H. B.), Young, Henderson. *Class II.*—Trenholme, Campbell (R. P.) ; Holden and Ker and Steacy, equal ; Browne and Macfarlane, equal ; Galt and McBurney (C.), equal ; Ives and Reynolds, equal. *Class III.*—Campbell (E. M.), Crack, Walbridge, McBurney (E. E.) ; Ryan and Stevenson, equal ; McMaster and Russell, equal : Watters, Moore ; Hinds and Rugg, equal ; Stephen.

SECOND YEAR.—*Class I.*—Carr (*Prize*), Paterson (E. R.) (*Prize*), Ship, Meyer, Munn, Paterson (R. C.), Turner (H.), Bourke-Wright, Gilday, Heine. *Class II.*—Brooks, Maclaren, Cameron, Duff, Leet, Ross (W. W.), Turner (W. D.) ; McGregor and Worth, equal ; Walker ; Leney and McConnell, equal ; Codd, Gardner. *Class III.*—Campbell : Shaw and Tarlton, equal : Bruce, Vineberg, Grace Prudham, Thompson, Pearson ; McLeod and Kneen, equal ; Stephens, Bishop, Dalgleish, Steen, Ross (A. B.), Jordan, Place, Dover, Evans, Nunns, Todd, Reynolds, Moore, Heeney, Costigan, Thomas, Larmonth, Colby.

## LATIN PROSE COMPOSITION.

SECOND YEAR.—*Class I.*—Carr (*Prize*) and Munn (*Prize*), equal : Paterson (E. R.), Brooks, Heine. *Class II.*—Paterson (R. C.), Meyer ; Bourke-Wright and Campbell and Duff and Place and Ship, equal. *Class III.*—Cameron, Tarlton, Leney ; Grace and Stephens and Thompson, equal ; Walker ; Dalgleish and Maclaren and McGregor, equal ; Turner (H.) ; Codd and Costigan and Leet and Ross (A. B.) and Todd, equal ; McConnell ; Pearson and Shaw, equal ; Colby and Gardner and McLeod, equal ; Bruce and Evans, equal ; Gilday and Prudham and Ross (W. W.) and Turner (W. D.), equal ; Bishop, Moore, Vineberg, Worth, Jordan, Kneen.

FIRST YEAR.—*Class I.*—Edwards (*Prize*) ; Redpath (H. L.) and Robertson, equal ; Ferguson, Burton, Patch, Potter (*Prize*), Redpath (J. C.). *Class II.*—Wainwright ; Bruce and Ellis and McLeod, equal ; Holiday : Paterson and White, equal ; Finley and Goodall, equal ; Brown ; McClung and McGill, equal ; Cotton, McKenzie, Rice. *Class III.*—Duguid ; Cumming and Henderson and Radford, equal ; Johnson (H.) and Lundie, equal ; Brodie and Reid and Stewart (D.), equal ; Burke (E.) and Laurie, equal ; King and Gardner, equal ; Mackay and McDougall, equal ; Oswald and Scrimger, equal ; Hurst and Johnson (R. D.) and Keith and Lee and Munroe and Parks, equal : Anderson (A. G.) and Kingsbury and Reynolds, equal ; Armstrong and Douglas and Holland, equal ; Hardisty and Mathers and Scriver, equal ; McDonald and Millar, equal ; Dixon, Cushing, Baker.

## HISTORY OF GREECE AND ROMAN LITERATURE.

FIRST YEAR.—*Class I.*—Robertson (*Prize*), Edwards, Holiday (*Prize*), Ferguson, Duguid. *Class II.*—Keith and McGill and Potter and Redpath (H. L.), equal; Reid and Wainwright, equal; Henderson; Patch and Redpath (J. C.), equal; Ells and Oswald, equal; Bruce and McLeod (J. B.) and Radford, equal; Dewitt and White, equal. *Class III.*—Hurst and McClung, equal; Cotton and Lundie and Mathers and Parks and Smith, equal; Dorion and Lee and Scrimger, equal; King and Kingsbury, equal; Brown and Gardner, equal; Burke (E. H.) and Burton and McKenzie and Munroe and Reynolds, equal; Hardisty and Rice and Scriver and Stewart (D.), equal; Brodie and Finley and Holland and Johnson (R. D.), equal; Cumming and McLeod (L. R.) and Phillips, equal; Goodall and Laurie and McDougall, equal; Baker and Johnson (H.) and MacKay and Millar and Sharpe, equal; McDonald.

## MENTAL AND MORAL PHILOSOPHY.

B. A. ORDINARY.—(*Moral Philosophy*).—*Class I.*—Lennon, Watson; Molson and Saunders, equal; Botterell and Fraser (A.), equal; McCuaig, Paterson, Mitchell, Denoon; Belton and Coburn and Gordon and Macphail and St. James, equal; Campbell (G. A.) and Ross, equal; Scrimger, Smiley; Anglin and Chalmers and Smythe, equal; Howell and McMartin and Watt (J. C.), equal. *Class II.*—Eagleson; Brace and Cavers, equal; Brown and Lough, equal; Vaudry, Hill (H.); Fraser (S. L.) and Turner, equal; Ashdown, Campbell (G. J.); Haughton and Hill (W. H.) and Smith, equal. *Class III.*—Kelly, Pollock (T. J.), Crozier, Horsey; Pollock (A. F.) and Watt (R. G.), equal; Internoscia, Young, Ferguson (H.), Frye, Miller.

THIRD YEAR.—(*Mental Philosophy*).—*Class I.*—Dorman and Ross (E.) (*Prize*) and Saxe (*Prize*), equal; McLeod, Donll (*Prize*); Henderson and Ryan, equal; Howard and Mackay, equal; McAteer and Wyman (H. B.), equal; Alexander and McFarlane and Rowatt, equal; Campbell (R. P.) and Trenholme and Willis, equal; Browne and McMaster and Ross (A. R.), equal; Wyman (D. B.), Campbell (E. M.); McBurney and Pinder and Stevenson, equal. *Class II.*—Reid and Watters, equal; Armstrong, Hill (H.), Russel, MacLean, Anglin, Johnston; Boyce and Douglas and Stephen, equal; Hill (W. H. P.); Bradshaw and Ives and Monsinger, equal. *Class III.*—Moore, Du Boyce, Crack; Halpenny and Sanderson, equal; McGuire, Mair, Frye.

SECOND YEAR.—(*Logic*).—*Class I.*—Duff and Turner (H. H.), equal; Leney, Williams, \*Dorman, Bourke-Wright; Paterson (E. R.) and Tarlton, equal; Ross (W. W.); Carr and Meyer and Paterson (R. C.) and Place and Ship, equal; Heal and Leet and Prudham and Shaw, equal; Brooks and Heine and Munn, equal; Campbell and Gilday and Vineberg, equal; Bates and Thompson and Worth, equal. *Class II.*—Bishop and Turner (W. D.), equal; Cameron, \*Grace; \*Brown and McConnell, equal; Bruce and Codd and Walker, equal; Colby and Todd, equal; Jordan

and McGregor, equal; \*Blythe and \*Charlesworth and Dalgleish, equal; \*Halpenny (W.) and Maclaren and Reynolds, equal; Kneen and Pearson and \*Rowan, equal; Moore and Nunns, equal. *Class III.*—Gardner, Dover, Evans; Larmonth and Stephens, equal; Heney and \*Monsinger, equal; \*Jall, \*McGuire, Costigan; \*Angell and Ross (A. B.), equal; \*Williamson; MacLeod and \*Roberts, equal; \*Halpenny (E. W.), Thomas, \*Rapson, \*Hill; \*Colborne and \*Miller and \*Nelson and Reid, equal; \*Haughton and \*Maclean and \*Sanderson, equal; Steen. *Prizes*—Turner H. H. and Heine, equal; Carr.

#### ENGLISH LITERATURE.

B.A. ORDINARY.—*Class I.*—Nicholls; Mitchell and Pitcher, equal; Scrimger; Campbell and Fraser, equal; Botterell, Hurst. *Class II.*—Paterson, Smiley; Brown and Coburn and Howell and Turner and Watson, equal. *Class III.*—Vaudry, Gordon; Ashdown and Young, equal.

#### ENGLISH LITERATURE AND RHETORIC.

THIRD YEAR.—*Class I.*—Archibald (*Prize*). Campbell, MacMaster, Saxe, Smith, Ross, Holden. *Class II.*—Reynolds, McMillan, McLeod, Russel; Galt and Mallinson and Walbridge, equal; Trenholme, Blyth. *Class III.*—Charlesworth, Heal, Stevenson, Roberts, Pollock, Stephen.

#### MODERN HISTORY.

SECOND YEAR.—*Class I.*—Carr (*Prize*), Redpath; Paterson (R. C.) and Walker, equal; Paterson (E. R.); Campbell and Ship, equal; Munn; Brooks and Duff and Thomas, equal; Bishop and Larmonth and Maclaren, equal; Heine, Place; Bourke-Wright and \*Trenholme, equal; Leet and Stephens, equal; Codd and Meyer and Prudham and Todd, equal. *Class II.*—Dalgleish and Leney and McLeod, equal; Cameron and Turner (H. H.), equal; \*Bradshaw and Ross (W. W.) and Vineberg and Worth, equal; Tarlton and Turner (W. D.), equal; McConnell, McGregor, Thompson; Gilday and Heeney, equal. *Class III.*—Bates and Grace and Pearson, equal; Colby and Dover, equal; Bruce and Reynolds and Ross (A. B.), equal; \*Alexander and Gardner and Steen, equal; Evans, Jordan, Shaw, Reid, Nunns; Costigan and Moore, equal; Kneen, \*McGuire.

#### ENGLISH LITERATURE.

FIRST YEAR.—*Class I.*—Robertson (*Prize*), Reid (*Prize*), Patch; Duguid and Ferguson and Gardner and Kingsbury and Potter, equal; McGill, Ellis, Cotton, Holiday, Hurst. *Class II.*—Edward, White; Bruce and Radford, equal; McDonald; Henderson and McLeod and Sriver, equal; Brown and \*Crozier and King and Scrimger and Wainwright, equal. *Class III.*—\*Reynolds, \*Smith (M.), Oswald, \*Goodall, \*McGregor; McClung and \*Munroe and \*Johnson (H.), equal; Hardisty and Campbell, equal; Lee and Lundie and McKenzie and Rice, equal; Cumming and Finley and Holland and Parks, equal; McDougall, Keith, Armstrong, Burke; Smith

(E. V.) and Stewart, equal; Phillips; Burton and Johnson (R. de L.), equal; Anderson and \*Dorion, equal; De Witt and \*Dixon (W. E.) and \*Mulholland, equal; Cushing and \*Sharpe, equal; Baker (G. H.) and Douglas and Vipond, equal; Mathers and \*Lyster and \*McCombe, equal.

#### MECHANICS AND HYDROSTATICS.

B.A. ORDINARY.—*Class I.*—Molson, Howell. *Class II.*—Ross, Browne. *Class III.*—Denoon, St. James, Watson, Pollock, McCuaig, Turner, Vaudry, Gordon, Chalmers.

THIRD YEAR.—*Class I.*—McBurney (C.), Archibald, Rowat, Mackay, Browne, Saxe, Wyman (D. B.), Ross (E.). *Class II.*—Reynolds and Trenholme, equal; Smith; Cameron and Walbridge, equal; Rugg; Campbell and Crack and Stephen, equal. *Class III.*—Douglas and Willis, equal; Ives and Ryan, equal; Macfarlane and Steacy, equal; Stevenson; Armstrong and Henderson, equal; Moore and Russel, equal; Howard and Wyman (H. B.), equal; McBurney (Edith); Watson and Watters, equal; Johnston, Ker, Hinds, Boyce, Ross (A. R.), Du Boyce.

#### ASTRONOMY AND OPTICS.

THIRD YEAR.—*Class I.*—Cameron and Mackay, equal; Ker; Archibald and Armstrong, equal.—*Class II.*—Rowat and Trenholme, equal; Moore; Steacy and Watson, equal. *Class III.*—Ryan, Douglas, Du Boyce, Ives.

#### EXPERIMENTAL PHYSICS.

B.A. ORDINARY.—*Class I.*—Robertson. *Class II.*—Howell, Hutchinson.

THIRD YEAR.—*Class I.*—Mackay, Howard, Cameron. *Class III.*—McIntosh, Hill.

#### Laboratory Course.

FOURTH YEAR.—*Class I.*—Robertson, Hutchinson. *Class II.*—Howell.

THIRD YEAR.—*Class I.*—Mackay, McIntosh, Cameron; Hill and Howard, equal.

#### GEOMETRY AND ARITHMETIC.

SECOND YEAR.—*Class I.*—Bruce, Brooks, Munn, Paterson (R. C.), Thompson; Gilday and Prudham, equal; Duff, Carr, Gardner, Shaw. *Class II.*—Meyer, Bates; Leney and Turner (H. H.), equal; Grace, Bourke-Wright, McGregor; Campbell and McConnell, equal; Todd; Vineberg and Reynolds, equal. *Class III.*—Leet; MacLaren and Cameron, equal; Bishop and Dalgleish and Turner (W. D.), equal; Worth, Pearson, Walker; Ross (W. W.) and Tarlton and Jordan, equal; Evans and Paterson (E.) and Ross (A. B.), equal; Kneen, Steen, Costigan; Place and Thomas, equal; Heine, Codd, Heeney, Dover; Colby and Larmonth and McLeod, equal.



**FIRST YEAR.**—*Class I.*—Edward and McClung, equal; Henderson, Robertson; Bruce and Smith, equal; Cotton; Brown and Patch, equal; McLeod; Ferguson and McDonald, equal; Mackay; White and Goodall, equal; Lee and Gardner, equal; McKenzie and Paterson, equal. *Class II.*—Oswald, Potter; Duguid and Ells, equal; Cameron; Holiday and King, equal; Burton and Millar and Laurier and Radford and Parks, equal; Cumming and Johnson (De L.), equal; Wainwright; Hardisty and Mathieson, equal; Rice and McGill and Johnson (H.), equal; Scrimger. *Class III.*—Keith, Armstrong, Douglas, Kingsbury; Dixon and Mitchell and Parker, equal; Sriver; Baker and Skinner, equal; Munroe and Finley, equal; Cushing and McDougal, equal; DeWitt and Lundie and Stewart (D.), equal; Phillips; Reid and Reynolds, equal; Burke (E. H.) and Burke (M. N.) and Holland, equal; Mathers, McLeod (Lottie), Hurst; Ireland and Dorion, equal; Stuart (Jas.) and Tighe; equal; Roberts.

#### TRIGONOMETRY AND ALGEBRA.

**SECOND YEAR.**—*Class I.*—Paterson (R. C.), Munn, Brooks, Paterson (E.); Turner (H. H.) and Carr and Shaw, equal; McConnell, Duff; Bruce and Leney and Turner (W. D.), equal; Bates and Thompson and Reynolds, equal. *Class II.*—Gardner, Prudham, Heine, Gilday, Worth; Bourke-Wright and Codd, equal. *Class III.*—Costigan and Jordan, equal; Bishop, McGregor, Campbell, Cameron, Todd; Dalgleish and Dover and Walker, equal; Ross (W. W.) and Tarlton, equal; Meyer and Thomas and Vineberg, equal; Kneen and Steen, equal; Grace; Leet and Nunns, equal; Colby and Ship, equal; Ross (A. B.), Moore, Pearson; McLeod and Reid, equal.

**FIRST YEAR.**—*Class I.*—Edward and Robertson, equal; Ferguson and Keith, equal; Smith; McClung and McKenzie, equal; Brown and McLeod and Henderson, equal; Johnson (De L.) and Holiday, equal; White; Bruce and Ells, equal; McDonald, King; Armstrong and Scrimger, equal; Cameron, Mackay, McGill. *Class II.*—Gardner and Radford, equal; Rice, Johnson (H.), Phillips; Millar and Patch and Goodall and Paterson, equal; Cotton and Stewart (D.), equal; Cushing, De Witt, Burton, Hardisty; Wainwright and McDougal, equal; Oswald. *Class III.*—Douglas and Dorion, equal; Baker, Lundie; Sriver and Parks, equal; Lee and Finley, equal; Kingsbury; Laurie and Potter, equal; Duguid and Burke (M. N.), equal; Burke (E. H.) and Mathers and Reid, equal; Mitchell, Hurst, Mathieson; Holland and Roberts and Reynolds, equal; Parker, Dixon.

#### HONOURS IN MATHEMATICS AND NATURAL PHILOSOPHY.

**B.A.**—*First Rank Honours and Anne Molson Gold Medal.*—Robertson (J. C.).

*First Rank Honours.*—Hutchinson (Margaret).

**THIRD YEAR.**—*First Rank Honours.*—Mackay (Malcolm) (*Prize*), Cameron (Mary T.).



## HONOURS IN MATHEMATICS.

SECOND YEAR.—*First Rank Honours*.—Brooks (Harriet) (*Prize*): Munn and Thompson, equal; Bruce, Gardner (William A.).

FIRST YEAR.—*First Rank Honours*.—Bruce (Guy O. T.) (*Prize*), Edward (*Prize*), Ferguson (*Prize*), Robertson. *Second Rank*.—McClung.

## FRENCH.

B.A. ORDINARY.—*Class I*.—Scott, St. James, Watson: Locke and Paterson, equal. *Class II*.—Ross, Molson, Saunders, Denoon, Brown, Scrimger. *Class III*.—Vandry, McMartin, Pollock, Chalmers, McCuaig.

THIRD YEAR.—*Class I*.—Archibald, (*Prize*), Young (*Prize*), Smith, Rugg, Doull, Hinds, Wyman (H. B.), Campbell (E. M.). *Class II*.—Macfarlane (L.) and Rowat, equal; Galt, Crack, McBurney (Ch.), Du Boyce; Ives and McBurney (E. E.), equal; Walbridge, Ross (A. R.), Browne. *Class III*.—McIntosh, Pinder, Moore, Watson.

SECOND YEAR.—*Class I*.—Colby, Maltby, Munn (*Prize*); Kneen (*Prize*) and Angus and Todd and Cameron (*Prize*) and Paterson (*Prize*) (R. C.), equal; Carr and Shaw and Tarlton, equal; Codd and Ship, equal; Walker (L.) and Ross, equal; Vineberg and Leet, equal; Brooks, Paterson (E. R.), Bruce (J. C.); Heine and McConnell, equal; Leney and Bourke-Wright and Reid, equal; Pearson, Duff; Dalgleish and Campbell and Steen, equal. *Class II*.—Reynolds, Bishop, Gilday, Stephens; McGregor and Larmouth, equal; Dover and Gardner (W. A.), and Nunns and Tooke, equal; Evans and MacLaren, equal; Jordan. *Class III*.—MacLeod, Costigan, Place, Thomas, Heeney.

FIRST YEAR.—*Class I*.—J. C. Redpath, Holiday (*Prize*), Finley (*Prize*); Radford and Patch, equal; Potter and Johnson, equal; Scrimger, Smith, MacKay (H.), Reford, McKenzie; Cumming and Paterson (Ch.); equal; Dixon; Cotton and Seriver (E. F.), equal; Duguid, Douglas, McDougall, Armstrong, Gardner, King (C. C.), Anderson (A. G.), Laurie, Wainwright, Lundie (J. F.), Reid, Ells, White, Burke (M. N.). *Class II*.—McDonald (P. A.), Johnson (R. de L.), Phillips, McGill, Bonin, Hurst, Bruce, Dorion, De Witt, Cushing, Oswald, Brown, Burke (E. H.), Lundie (J. A.), Parks, McClung, Reynolds, McLeod (Lottie). *Class III*.—Parker and Henderson, equal; Kingsbury, Hardisty, Mitchell; Vipond and Baker and Mathers, equal; Kay, Eagleson, Stewart, Tighe, Redpath (J. H.).

## GERMAN.

B.A. ORDINARY.—*Class I*.—Locke, Pitcher, Nicholls. *Class II*.—Denoon; Hurst and Macphail, equal; McCuaig.

THIRD YEAR.—*Class I*.—Young (*Prize*), Cameron. *Class II*.—Reynolds, Rugg, Willis; *Class III*.—Holden, McBurney.

SECOND YEAR.—*Class I*.—Brooks (*Prize*), Cameron, Munn (*Prize*), Pearson. *Class II*.—Walker, Colby, Reynolds. *Class III*.—Thomson, Codd, Grace, Jordan.

FIRST YEAR.—*Class I.*—Edward (*Prize*), Robertson, Burton, Ferguson, Goodall.  
*Class II.*—None. *Class III.*—Millar, Shaw.

FIRST YEAR.—*Donalds Department.*—*Class I.*—McGill (*Prize*), Finley. *Class II.*—Radford and Johnson, equal; Scrimger. *Class III.*—King, Reid.

#### HEBREW.

B.A. ORDINARY.—*Class II.*—Coburn (D. N.). *Class III.*—Young (S.), Ashdown.

THIRD YEAR.—*Class I.*—Wyman (D. B.) (*Prize*), Boyce. *Class II.*—Mallinson and McLeod (S.) and Johnson (W.) equal. *Class III.*—Pollock (A. T.), Kelly (Mat.), Horsey, Watt (R. G.).

SECOND YEAR.—*Class I.*—Meyer (J. B.) (*Prize*), Turner (H. H.). *Class II.*—Alexander,\* Turner (Wm. D.); Bates and Curdy \*and Haughton,\* equal. *Class III.*—\*McAteer and Prudham, equal; \*Lough,\* Bradshaw; Worth (F.) and Moore, equal; Reid, Ross (A. B.), Ferguson (H.) and Crombie (G. L.), equal; Abram (L.), \*Smythe; \*Sykes and McGuire, equal; Mair, Crozier.

FIRST YEAR.—*Class I.*—McLeod (J. B.) (*Prize*), Rice, Smith (E. V.), Keith. *Class II.*—\*McGregor, Lee,\* Blythe,\* Charlesworth,\* Heal, Cameron (A. G.). *Class III.*—Williams,\* Mathieson, Colborne\* (J. H.), Munroe, Knowles, Mick, MacLean (A. S.), \*Holland, Stewart (D.), Ireland (A. A.), \*Poston.

#### GEOLOGY.

B.A. ORDINARY.—*Class I.*—Scott, Paterson, McCuaig; Molson and Ross, equal; Chalmers. *Class II.*—Lennon, Pollock, Brown, Coburn; Brace and Gordon and St. James, equal; Belton and Watson, equal; Scrimger, McIntosh, Vaudry; Eagleson and Denoon, equal; McMartin, Fraser. *Class III.*—Smith; Crozier and Young and Turner, equal; Haughton, Ashdown, Lough, Ferguson.

#### ASTRONOMY AND OPTICS.

FOURTH YEAR.—*Class I.*—Robertson, Molson, Howell. *Class II.*—Ross, Paterson, Gordon. *Class III.*—Pollock, McMartin, Hutchinson, Turner.

#### ZOOLOGY.

THIRD YEAR.—*Class I.*—Smith (*Prize*), Henderson, Saxe (*Prize*), Hinds, Howard, Browne, Campbell (R. P.), Macfarlane and McBurney and Willis and Young, equal; McLeod. *Class II.*—McMillan and Reynolds and Watters, equal; Angel and Campbell (Ed. M.) and Ross (Elizabeth), equal; Rowan and Russel, equal; Ryan and Wyman (H. B.), equal; Stevenson and Walbridge, equal. *Class III.*—Crack and Mallinson, equal; Boyce, Armstrong, MacLean (S.); Johnson and McBurney (Edythe), equal; Rugg, McIntosh, Watson, Holden; McMaster and Wyman (D. B.), equal; Charlesworth, Williams; Galt and Ross (A. R.), equal; Doull, Pinder, Halpenny, Heal; Colborne and Mick, equal; Blythe Stephen, Hall.

## BOTANY.

SECOND YEAR.—*Class I.*—Prudham, Walker (*Prize*). Paterson, (*Prize*, (R. C.): Duff and Carr. equal: Campbell: Colby and Bourke-Wright, equal; Paterson (E. R.) and Dover, equal.—*Class II.*—Codd and Shaw and Heine, equal: Place and Kneen, equal: Jordan, Worth: McGregor and McLaren, equal: Leet, Pearson, Reynolds.—*Class III.*—Meyer, Reid, Ross (W. W.), Cameron, Dalglish, Bates, Bishop, Leney, Nunns, Heeney, Turner (H. H.), MacLeod, Tarlton, Evans, Turner (W. D.), Vineberg, Ship, Moore.

THIRD YEAR.—*Class I.*—Watters, Campbell, Howard.

## CHEMISTRY.

FIRST YEAR.—*Class I.*—White (E. H.) (*Prize*), McClung: Edward and Robertson (L.), equal; Paterson, Smith (E. V.); Bruce and Ferguson (C. O.), equal: Goodall: McDonald and McLeod (J. B.), equal. *Class II.*—Duguid, Ellis: Cotton and Munroe, equal: Mathers, Rice: Cameron and Dixon (W. E.), equal; McAteer and Reid (L. McK.), equal; Henderson and King and Lundie (J. A.), equal. *Class III.*—Hurst and Lee, equal; McKenzie, Holiday; Keith and Oswald (M. C.), equal; Reid (L. W.); Laurie and Potter, equal; Brown (W. G.) and Radford, equal: Wainwright, Parks, Scrimger: Burke (E. A.) and Finley, equal; Anderson (F.) and Campbell (J. D.) and Kingsbury, equal; McDougall, McGill; Dorion and Reynolds, equal; Johnson (H.), Sriver; Cumming and Patch, equal: Armstrong and Baker (G. H.) and Johnson (R. DeL.), equal: Hardisty and Mathieson, equal.

## PHYSICAL CULTURE.

## BRONZE MEDAL.

Dalglish, R. W.

## DONALDA PRIZES FOR PHYSICAL CULTURE.

*Graduating Class.*—Brown, Justine.

*Undergraduates.*—Reid, Lena.

*Honorable Mention.*—Finley, Kathleen.

## MORRIN COLLEGE.

## INTERMEDIATE.

HEBREW.—*Class I.*—Stuart ((J. A.). *Class II.*—Pidgeon, Reid.

GREEK.—*Class II.*—Seifert, Stuart.

LATIN.—*Class II.*—Seifert. *Class III.*—Meiklejohn, Reid, Stuart, Pidgeon.

- LATIN PROSE COMPOSITION.—*Class III.*—Seifert, Meiklejohn.  
 TRIGONOMETRY AND ALGEBRA.—*Class I.*—Seifert. *Class II.*—Meiklejohn, Stuart.  
*Class III.*—Pidgeon, Reid.  
 GEOMETRY AND ARITHMETIC.—*Class II.*—Seifert. *Class III.*—Pidgeon, Reid,  
 Stuart, Meiklejohn.  
 LOGIC.—*Class I.*—Seifert. *Class II.*—Meiklejohn. *Class III.*—Pidgeon,  
 Stuart, Reid.  
 ENGLISH LITERATURE AND HISTORY.—*Class I.*—Webster, Seifert. *Class II.*—  
 Meiklejohn, Stuart. *Class III.*—Reid, Pidgeon.  
 FRENCH.—*Class I.*—Seifert. *Class III.*—Meiklejohn.

## ST. FRANCIS COLLEGE.

## INTERMEDIATE.

- LATIN.—*Class I.*—Carnie.  
 TRIGONOMETRY AND ALGEBRA.—*Class III.*—Crack, Rivard, Carnie.  
 GEOMETRY AND ARITHMETIC.—*Class III.*—Crack, Rivard.  
 LOGIC.—*Class II.*—Rivard.  
*Class III.*—Carnie, Crack.  
 ENGLISH LITERATURE AND HISTORY.—*Class I.*—Rivard.—*Class II.*—Carnie.  
 FRENCH.—*Class I.*—Rivard.  
*Class II.*—Carnie.  
*Class III.*—Crack.

## STANSTEAD WESLEYAN COLLEGE.

## INTERMEDIATE.

- GREEK.—*Class III.*—Jones.  
 LOGIC.—*Class II.*—Jones.

## FIRST YEAR.

- GREEK.—*Class III.*—Rugg.  
 LATIN.—*Class II.*—Rugg. *Class III.*—Hovey, Howden, McDuffee.  
 GEOMETRY AND ARITHMETIC.—*Class II.*—Hovey, Rugg. *Class III.*—  
 Howden.  
 ALGEBRA AND TRIGONOMETRY.—*Class I.*—Rugg. *Class II.*—Hovey. *Class*  
*III.*—Howden.  
 ANCIENT HISTORY.—*Class III.*—Rugg, Howden, McDuffee.  
 ENGLISH LITERATURE.—*Class II.*—Howden; Hovey and Rugg, equal.  
*Class III.*—McDuffee.  
 FRENCH.—*Class III.*—Howden, McDuffee; Hovey and Rugg, equal.  
*Passed the Sessional Examination, Rugg, Howden (s.).*

## FACULTY OF APPLIED SCIENCE.

## GRADUATING CLASS.

- CHASE, HARRY ALEXANDER.—Honours in Electrical Engineering and Hydraulics.  
 GILL, JAMES LESTER WILLIS.—British Association Gold Medal ; British Association Exhibition ; Honours in Dynamics of Machinery, Hydraulics, Thermodynamics and Mechanical Engineering.  
 GREEN, JOSEPH SAMUEL RAOUL.—McFee Graduating Prize for best examination in Metallurgy ; Honours in Metallurgy.  
 KILLALY, HAMILTON McMURRAY, B.A.—Honours in Designing.  
 REINHARDT, CARL.—Honours in Designing.  
 RUTHERFORD, FOREST.—Honours in Metallurgy and Designing ; First Rank Honours in Geology and Mineralogy.  
 SMAILL, ALBERT EDWARD.—Honours in Designing.  
 STEWART, ROBERT HOLDEN.—Governor General's Silver Medal ; Honours in Hydraulics, Metallurgy and Designing ; First Rank Honours in Geology and Mineralogy.  
 WEBB, WILLIAM MORTON.—Honours in Designing.  
 WRIGHT, CHARLES HARVEY.—Honours in Electrical Engineering, Hydraulics, Thermodynamics and Physics.

## THIRD YEAR.

- Bell, John W.—Prizes for Practical Chemistry, Mapping and Mining Drawing.  
 Newcombe, Avar B.—Special Prize for Surveying Field Work.  
 Stovel, Russell W.—Scott Exhibition of \$60.00 ; Prizes for Machine Design, Mathematics, Mechanical Drawing, Physical Laboratory, Dynamics of Machinery, Physics, Theory of Structures, Electrical Engineering, Testing Laboratory Work and Electrical Laboratory.  
 Thomson, Henry N.—Special Prize for Surveying Field Work ; Prizes for Surveying and Determinative Mineralogy.  
 Turnbull, John M.—McFee Prize for Mining ; Prizes for Physics and Determinative Mineralogy.

*Passed the Sessional Examinations.*

(In Order of Merit.)

## CIVIL ENGINEERING.

- \* Macleod, George R., Uigg, P.E.I.

## ELECTRICAL ENGINEERING.

- Stovel, Russell W., Toronto, Ont.  
 Thomson, Clarence, Montreal.  
 Macdonald, James E., New Glasgow, N.S.  
 Burnham, Harold B., Peterboro, Ont.  
 Symmes, Howard C., Aylmer, Que.  
 \* Macbean, Stanley L., Montreal.



- Davidson, Shirley, Montreal.  
 Edward, John R., Outremont.  
 • Pitcher, Norman C., Montreal.  
 • Macdonald, Peter W., West Bay, N.S.  
 • Walters, Morley, Hull, Que.

## MECHANICAL ENGINEERING.

- Connal, William F., Peterboro, Ont.  
 Campbell, Alexander, Ottawa, Ont.  
 White, Frank H., Montreal.  
 McLaren, Duncan T., Montreal.  
 • McKibbin, Frederick W. J., Peterboro, Ont.  
 Drinkwater, Charles G., Montreal.  
 • Balfour, Reginald H., Montreal.  
 • Haycock, Richard L., Ottawa, Ont.  
 • Ferguson, Thomas, Peterboro, Ont.  
 Finnie, Oswald S., Ottawa, Ont.  
 • Yorston, Louis, Pictou, N.S.

## MINING ENGINEERING.

- Thomson, Henry N., Quebec, Que.  
 Turnbull, John M., Montreal.  
 Bell, John W., Montreal.

## PRACTICAL CHEMISTRY.

- Suter, Robert W., Carleton Place, Ont.  
 Drysdale, George A. Boston, U.S.A.

## SECOND YEAR.

- Cape, Edmund.—Prize for Entrance Examination.  
 Eaves, Edmund.—Prize for Entrance Examination; Prize for Mathematics.  
 Laurie, Albert.—Prize for Entrance Examination; Prize for Mechanical Drawing.  
 Macphail, William M.—Prizes for German and Shopwork.  
 McCarthy, George A.—Prizes for Theoretical and Practical Physics. Surveying and Mapping.  
 Sheffield, Charles.—Prizes for French and Mechanism.  
 Young, George A.—Prize for Practical Chemistry.

*Passed the Sessional Examinations.*

(In Order of Merit).

## CIVIL ENGINEERING.

- Macphail, William M., Orwell, P.E.I.  
 McCarthy, George A., Moncton, N.B.

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\* To pass supplemental examination.

Irving, Thomas T., Vernon River Bridge, P.E.I.  
 Matteson, Ernest H., Oyster Bed Bridge, P.E.I.  
 Bond, Frank L.C., Montreal.  
 \*Benney, Walter W., D'Aillebout, Que.

## ELECTRICAL AND MECHANICAL ENGINEERING.

Eaves, Edmund, Montreal.  
 Cape, Edmund, Hamilton, Ont.  
 Sheffield, Charles, Kingston, Ont.  
 Laurie, Albert, Montreal.  
 Thomas, Leonard E.L., Melbourne, Que.  
 Dean, Bertram D., Hamilton, Ont.  
 Waterous, Charles A., Brantford, Ont.  
 Archibald, Harry P., Antigonish, N.S.  
 McRae, John B., Ottawa, Ont.  
 MacLennan, Frank W., Cornwall, Ont.  
 Summa, Vito M., Avigliano, Italy.  
 Davidson, J. Herbert, Montreal.  
 \*Patton, W. H., Huntington, Que.  
 McLea, Ernest H., Montreal.  
 \*Scott, James H., Outremont, Que.  
 \*Bacon, Frederick T. H., Montreal.  
 \*Reaves, Campbell, Montreal.

## MINING ENGINEERING.

Atkinson, Donald C. T., Etchemin, Que.  
 MacLean, Thomas A., Charlottetown, P.E.I.  
 Young, George A., Kingston, Ont.  
 Butler, Percy, Montreal.  
 \*Davis, Angus W., Montreal.  
 \*Ainley, Charles M., Almonte, Ont.  
 Atkinson, William J., Glenboro, Man.  
 Hillary, George M., Whitby, Ont.

## FIRST YEAR.

Bowman, Archibald A.—Prize in English.  
 Colpitts, Walter W.—1st Taylor Prize Freehand Drawing, 2nd Fleet Workshop Prize. Prizes in Descriptive Geometry, and Mapping.  
 Fetherstonhaugh, Edward P.—Prize in French.  
 Hyde, George T.—2nd Taylor Prize in Freehand and Drawing.  
 Kirkpatrick, Stafford F.—Prize in Mathematics.  
 McLean, William B.—Prize in Chemistry.  
 Preston, John.—1st Fleet Workshop Prize.  
 Shaw, John A.—Prizes in Chemical Laboratory and French.

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\*To pass supplemental examination.

*Passed the Sessional Examinations.*

(In Order of Merit.)

- Colpitts, Walter W., Moncton, N.B.  
 Kirkpatrick, Stafford F., Kingston, Ont.  
 McLean, William B., Pictou, N.S.  
 Hyde, George T., Montreal.  
 Young, William M., Renfrew, Ont.  
 Shaw, John A., Montreal.  
 Grier, Arthur G., Montreal.  
 Fraser, James W., Bridgeville, N.S.  
 Denis, Leopold, Montreal.  
 Burges, R. Earl, Wolfville, N.S.  
 Blaylock, Selwyn G., Danville, Que.  
 Bowman, Archibald A., New Glasgow, N.S.  
 Fetherstonhaugh, Edward P., Montreal.  
 Yuile, Norman M., Montreal.  
 Moore, Ernest V., Peterboro, Ont.  
 Waller, George W., Bartonville, Ont.  
 Fraser, Charles E., Montreal.  
 \*Campbell, Norman M., Montreal.  
 Henderson, Richard A., Chilliwack, B.C.  
 \*Wilson, Robert M., Montreal.  
 Fraser, Harold, Brockville, Ont.  
 Dargavel, James S., Elgin, Ont.  
 McLeod, Norman M., Montreal.  
 \*Peden, Frank, Montreal.  
 Willard, Edward C., Hamilton, Ont. } equal  
 \*Hyde, James C., Montreal.  
 Rogers, Reginald H., Alberton, P.E.I.  
 \*Preston, John, Toronto, Ont.  
 \*Wenger, Edgar I., Ayton, Ont.  
 \*Gough, Richard T., Halifax, N.S.  
 \*McLaren, Archibald J., Montreal.  
 \*Whyte, John S., Osgood, Ont.  
 \*Ingraham, Bruce A., Sydney, C.B.  
 \*Pender, William D., Toronto, Ont.  
 \*Cornwall, Clement A. K., Ashcroft, B.C.  
 \*Hutchinson, William S., Westmount.  
 \*Gagnon, Louis F., Westmount.  
 \*Stevens, Angus P., Dunham, Que.  
 McMillan, George P., Petrolia, Ont.  
 \*Pergau, Harry, Lyn, Ont.  
 \*Morgan, Charles B., Hamilton, Ont.  
 \*Porcheron, Alphonse, Montreal.  
 \*Coussirat, Henri A., Montreal.  
 \*Hickey, John V., Montreal.

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\*To pass supplemental examination.

## STANDING IN THE SEVERAL SUBJECTS.

## ENGLISH.

FIRST YEAR.—*Class I.*—Bowman, Colpitts, Fraser (C. E.), Young (W. M.), Whyte (J. S.), Fraser (J. W.), Morgan; Fetherstonhaugh and McLean, (W. B.), equal. *Class II.*—Moore (E. V.), Shaw, McMaster; McLeod and Moore (W. A.), equal; Burgess and Preston, and Waller, equal; Campbell (N. M.), Campbell (F. W.), McLaren (A. J.); Blaylock and Dargavel and Wilson, equal; Denis (L.) and Hyde (J. C.), equal; Cox and Fraser (H.), equal; Gagnon and Ingraham and Kirkpatrick and Peden and Yuile, equal; Cornwall and Henderson, equal; Hutchinson and Nicholls, equal. *Class III.*—Austin and Hickey and Wenger, equal; Grier, Davidson (W. A.); Gough and Hatchette and Parizeau and Pender and Ramsay, equal; Millar and Pergau, equal; McMillan, St. George, Stevens, Donnelly, Hyde (J. C.), Parks.

## FRENCH.

SECOND YEAR.—*Class I.*—Sheffield, McCarthy, Eaves, Davis, Thomas, MacLean (T. A.), Matheson. *Class II.*—Cape and Bacon, equal; Laurie, Waterous, Dean, Bond, Butler, MacLennan. *Class III.*—Scott, Atkinson (W. J.), Reaves, Summa.

FIRST YEAR.—*Class I.*—Fetherstonhaugh, Stevens; Hyde (C. T.) and Peden, equal; Yuile, Wilson, Grier, Young (W. M.), Kirkpatrick, Blaylock, Henderson. *Class II.*—McLean (W. M.); McMaster and Pender and Smith, equal; Hyde (J. C.), McLeod (N.), McMillan. *Class III.*—Ramsay, Sise, Ingraham, Hatchette, Fraser (H.), Burgess, Parks, Strathy, Wilkins, Kane, Hickey, Pergau, Cornwall, Dargavel.

## GERMAN.

SECOND YEAR.—*Class I.*—Macphail, Atkinson (D. C. T.). *Class II.*—Irving; Davidson (J. H.) and Summa, equal. *Class III.*—Young (C. A.), Archibald, \*McLea, \*McRae, \*Patton.

FIRST YEAR.—*Class I.*—Shaw (J. A.), Colpitts. *Class II.*—Fraser (C. E.) and McLaren (A. J.), equal; Bowman, Wenger, Waller. *Class III.*—Whyte (J. S.), Fraser (J. W.), Nicholls, Millar, Willard, Morgan, \*\*Gough, \*\*Moore (E. V.).

## MATHEMATICS.

THIRD YEAR.—*Class I.*—Stovel, Connal. *Class II.*—Thomson (C.), Turnbull, Macdonald (J. E.), Thomson (H. N.), Campbell (A.), Symmes, Burnham; Edward and McLaren (D. T.), equal; Macdonald (P. W.), Davidson (S.), Ferguson. *Class III.*—Chamberlain, Walters, †MacLeod (G. R.), †Bell (J. W.), Pitcher; Packard and Yorston, equal; †Beatty, †Sise (C. F.); †Drinkwater and Finnie and †White (F. H.), equal.

\*Supplemental in Translation into English.

\*\* " " Translation English-German and German-English.

† " " Calculus.

SECOND YEAR.—*Class I.*—Eaves, Irving, Cape, Sheffield, McCarthy. *Class II.*—Macphail, Laurie, MacLean (T. A.), Thomas, Davis, Young (G. A.), Dean, Waterous, Atkinson (D. C. T.), Butler, Matheson. *Class III.*—Sumna, Atkinson (W. J.), McLea, Ainley; Hawker and Patton, equal; MacLennan, Bond, \*Benny, \*Davidson (J. H.); †Archibald and Hillary, equal; Gisborne; Bacon and Scott, equal; †McRae.

FIRST YEAR.—*Class I.*—Kirkpatrick, McLean (W. B.), Colpitts, Grier, Young (W. M.), Fraser (J. W.), Denis, Rogers; Burgess and Hyde (G. T.), equal. *Class II.*—Shaw, Dargavel, Yuile, Fraser (H.), Featherstonhaugh, Moore (E. V.); Bowman and Waller, equal; Blaylock, Fraser (C. E.); \*Hutchinson and Preston, equal; Henderson, \*Campbell (N. M.), McLeod (N.), Stevens, \*Wilson, \*Hyde (J. C.), Willard. *Class III.*—Peden; Gough and \*Pender, equal; \*Wenger, \*Cornwall, \*Whyte (J. S.), \*Gagnon, \*McLaren (A. J.), \*Pergau, \*Davidson (W. A.), \*Cox; \*Austin and \*Ingraham, equal; McMillan, \*Porcheron.

#### PHYSICS (*Theoretical and Practical*).

THIRD YEAR.—(*Electrical Engineering Course*). *Class I.*—Stovel, Macdonald (J. E.), Macbean, Thomson (C.). *Class II.*—Edward, Symmes, Pitcher, Davidson (S.), Burnham. *Class III.*—Macdonald (P. W.), Archibald, Walters; Blair and Packard, equal; Sise (C. F.), Bovey.

(*Civil, Mechanical, Mining and Chemistry Courses*).—*Class I.*—Turnbull, Campbell (A.), Thomson (H. N.). *Class II.*—White (F. H.), McLaren (D. T.), Ross, Suter, Connal, Bell (J. W.), Beatty. *Class III.*—Ferguson; Balfour and Dougall, equal; Drinkwater, Yorston, Haycock, McKibbin, Finnie.

SECOND YEAR.—*Class I.*—McCarthy, Cape, Irving, Laurie. *Class II.*—Young (G. A.); MacLennan and Sheffield, equal; Atkinson (W. J.) and Macphail, equal; Atkinson (D. C. T.), Eaves; Dean and MacLean (T. A.) and McIntosh, equal; Thomas, Davidson (J. H.), Davis, Waterous, McKerras, McRae. *Class III.*—Matheson, Bond, Hillary; Ainley and Scott, equal; Bacon and Gisborne, equal; McLea, Butler, Summa; Benny and Reaves, equal.

#### CHEMISTRY.

FIRST YEAR.—*Class I.*—McLean (B. W.), Kirkpatrick, Colpitts, Shaw. *Class II.*—Bowman and Denis (L.), equal; Fraser (J. W.), Rogers, Blaylock, Whyte (J. S.); Campbell (N. M.) and Waller, equal; Hyde (G. T.), Grier, Henderson, Featherstonhaugh, Gagnon; McLaren (A. J.) and Preston, equal; Cornwall and Fraser (C. E.) and Moore (E. V.), equal; Burgess and Young (W. M.) and Yuile, equal. *Class III.*—Hutchinson and Morgan, equal; Dargavel and Wilson, equal; Fraser (H.), Wenger, Hyde (J. C.), Austin, Nicholls, Coussirat, Gough; Pender and Stevens, equal; Ingraham, McMillan.

\* To pass a Supplemental in Mechanics.

† “ “ “ “ Calculus.



CHEMISTRY (*Inorganic*).

FOURTH YEAR.—*Class I.*—McCallum. *Class II.*—Johnson. *Class III.*—None.

CHEMISTRY (*Organic*).

FOURTH YEAR.—*Class I.*—McCallum. *Class II.*—Johnson. *Class III.*—None.

THIRD YEAR.—*Class I.*—None. *Class II.*—Suter. *Class III.*—None.

## ASSAYING.

FOURTH YEAR.—*Class I.*—Stewart, Webb. *Class II.*—Green, Rutherford (M.), Mussen. *Class III.*—None.

## ANALYTICAL CHEMISTRY AND ASSAYING.

FOURTH YEAR.—*Class I.*—McCallum. *Class II.*—Johnson. *Class III.*—None.

## METALLURGY.

FOURTH YEAR.—*Class I.*—Green, Rutherford (F.), Stewart. *Class II.*—Webb, Mussen, Johnson (W. S.). *Class III.*—McCallum.

## ZOOLOGY.

SECOND YEAR.—*Class I.*—Macphail. *Class II.*—Matheson, McCarthy, Irving, Suter, Atkinson (D. C. T.), Young (C. A.). *Class III.*—MacLean (T. A.), Bond, Butler, Davis, Atkinson (W. J.), Benny, Ainley.

## GEOLOGY AND MINERALOGY.

THIRD YEAR.—*Class I.*—None. *Class II.*—Turnbull, Suter, Thomson (H. N.). *Class III.*—Hillary and Macleod (G. R.), equal; Dougall, Bell (J. W.).

GEOLOGY (*Advanced*).

FOURTH YEAR.—*Class I.*—Stewart, Rutherford (F.), Webb. *Class II.*—Mussen, Green. *Class III.*—None.

MINERALOGY (*Advanced*).

FOURTH YEAR.—*Class I.*—Stewart, McCallum; Johnson and Rutherford (F.), equal. *Class II.*—Green, Mussen, Webb. *Class III.*—None.

THIRD YEAR.—*Class I.*—Thomson (H. N.) and Turnbull, equal. *Class II.*—Suter. *Class III.*—Bell (J. W.).

## MUSEUM WORK IN GEOLOGY AND MINERALOGY.

FOURTH YEAR.—*Class I.*—Stewart, Rutherford (F.). *Class II.*—Mussen, Webb, Green. *Class III.*—None.

## DETERMINATIVE MINERALOGY.

THIRD YEAR.—*Class I.*—Thomson (H. N.) and Turnbull, equal; Suter, McCarthy, Bell (J. W.). *Class II.*—None. *Class III.*—Dougall, Hillary.

## MINING.

THIRD YEAR.—*Class I.*—Turnbull. *Class II.*—Bell (J. W.), Thomson (H. N.). *Class III.*—Dougall.

## SURVEYING.

THIRD YEAR.—*Class I.*—Thomson (H. N.). *Class II.*—Turnbull, Macleod. *Class III.*—Angus, Bell (J. W.), Dougall.

SECOND YEAR.—*Class I.*—McCarthy, Macphail. *Class II.*—Irving, Atkinson (D. C. T.), Ainley, Young (G. A.), Davis, Matheson. *Class III.*—Butler, Hillary, Maclean (T. A.), Atkinson (W. J.), Bond, Benny.

## SURVEYING FIELD WORK.

THIRD YEAR.—*Class I.*—Thomson (H. N.), Newcombe. *Class II.*—\*Turnbull, Bell (J. W.), Dougall, Macleod (G. R.). *Class III.*—Angus.

SECOND YEAR.—*Class I.*—Butler. *Class II.*—Ainley, Atkinson (D. C. T.); Bond and Macphail and Matheson, equal; Atkinson (W. J.); Benny and Irving, equal; MacLean (T. A.). *Class III.*—Davis, Young (G. A.).

## GEODESY.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Huestis, Hare, Reinhardt, Dufresne, Denis (T.). *Class III.*—Killaly, Angus.

## FREEHAND DRAWING.

FIRST YEAR.—*Class I.*—Colpitts, Hyde (G. T.), Peden; Preston and Young (W. M.), equal; Burgess and Kirkpatrick and Wilson, equal; Gough and Ingraham and Shaw, equal. *Class II.*—Grier; Blaylock and Campbell (N. M.) and Fetherstonhaugh, equal; Morgan; Austin and Dargavel and Denis (L.) and Moore (W. A.) and Nicholls and Waller and Whyte (J. S.), equal; McLean (W. B.) and Millar and Yuile, equal; Cox and Fraser (C. E.) and Hyde (J. C.) and McMaster and Moore (E. V.) and Pergau, equal; Bowman and Davidson (W. A.) and Donnelly and Fraser (J. W.) and Wenger and Willard, equal; Gagnon and Hatchette, equal; Hickey and Kane and McLaren (A. J.) and Stevens, equal; Campbell (F. W.) and Cornwall and McMillan and Smith, equal; Parks and Sise (E. F.), equal; Coussirat and Henderson and Hutchinson, equal. *Class III.*—Fraser (H.) and Howell, equal; Pender and Rogers and Wilkins, equal; Percy and St. George, equal; Ramsay, Hunt; Strathy and Whiteway, equal.

\* To pass Supplemental in Levelling.

## DESCRIPTIVE GEOMETRY.

**THIRD YEAR.**—*Class I.*—None. *Class II.*—Macleod (G. R.). *Class III.*—Angus.

**SECOND YEAR.**—*Class I.*—None. *Class II.*—Atkinson (D. C. T.) and McCarthy, equal; Cape, Macphail, Thomas, Eaves, Laurie, McLeod (N.) and Patton, equal; Ainley and Irving, equal; McLean, MacLennan. *Class III.*—Young (G. A.), MacKerras, MacLean (T. A.), Butler, Dear; Davidson (J. H.) and Matheson and Summa, equal; Sheffield and Atkinson (W. J.), equal; Bond, Hillary, Archibald, Reaves, McIntosh, Waterous.

**FIRST YEAR.**—*Class I.*—Colpitts, Moore (W. A.), Hyde (G. T.), Kirkpatrick, Peden, Young (W. M.); Burgess and Moore (E. V.), equal; McLean (W. B.), Shaw. *Class II.*—Blaylock and Denis (L.) and Gough, equal; Preston and Whyte (J. S.), equal; Fraser (H.); Grier and McIntosh, equal; Fraser (J. W.) and Willard and Wilson and Fetherstonhaugh and Nicholls and Hyde (J. C.), equal; Dargavel, Waller, Rogers, Bowman; Fraser (C. E.) and Gagnon and Wenger, equal; Austin. *Class III.*—Hickey and Sise (E. F.) and Yuile, equal; Pergau and Ingraham, equal; Coussirat and McLaren (A. J.), equal; Cornwall and Henderson, equal; Morgan; Mathers and Pender, equal; McMillan and Kane, equal; Hutchinson, Davidson (W. A.), Cox; Campbell (N. M.) and Stevens, equal.

## MAPPING.

**THIRD YEAR.**—(*Civil Engineering Course*).—*Class I.*—Macleod (G. R.). *Class II.*—None. *Class III.*—Angus. (*Mining Engineering Course*).—*Class I.*—Bell (J. W.), Thomson (H. N.). *Class II.*—Turnbull. *Class III.*—Dougall.

**SECOND YEAR.**—(*Civil Engineering Course*).—*Class I.*—McCarthy. *Class II.*—Macphail, Irving, McKenzie, Matheson. *Class III.*—Bond, Benny. (*Mining Engineering Course*).—*Class I.*—Butler and Davis, equal. *Class II.*—Atkinson (D. C. T.) and Ainley, equal; McLean (T. A.) and Young (G. A.), equal; *Class III.*—Atkinson (W. J.).

**FIRST YEAR.**—*Class I.*—Colpitts, Hyde (G. T.), Peden, Burgess, Gough. *Class II.*—Willard; Blaylock and Grier and Young (W. M.), equal; Fetherstonhaugh and Kirkpatrick and McLean (W. B.), equal; Bowman and Shaw, equal; Preston and Fraser (J. W.), equal; Wilson; Coussirat and Dargavel and Fraser (C. E.) and Fraser (H.) and Ingraham and Morgan, equal; Cox and Denis (L.) and Hyde (J. C.) and Moore (W. A.), equal; Campbell (N. M.) and Yuile, equal; Austin and Nicholls and St. George and Whyte (J. S.), equal; McMaster and Moore (E. V.), equal. *Class III.*—Cornwall and Donnelly and Davidson (W. A.) and Gagnon and McLaren (A. J.) and McMillan and Pergau and Rogers and Wenger, equal; Campbell (F. W.) and Millar and Pender, equal; Hickey and Stevens, equal; Hutchinson; Hachette and Kane and Sise (E. F.) and Waller, equal; Henderson.

## MINING DRAWING.

THIRD YEAR.—(*Mining Engineering Course*).—*Class I.*—Bell (J. W.), Turnbull Dougall, Thomson (H. N.).

## MECHANICAL DRAWING.

THIRD YEAR.—(*Electrical Engineering Course*).—*Class I.*—Stovel, MacDonald. (J. E.), Macbean. *Class II.*—Archibald, Sise (C. F.), Symmes, Blair. *Class III.*—Pitcher; Burnham and Davidson (S.), equal; Thomson (C.), Walters, Bovey; Edward and Macdonald (P. W.), equal; Packard, (*Mechanical Engineering Course*).—*Class I.*—Balfour; White (F. H., and Campbell (A.) and Connal and Haycock, equal; Drinkwater. *Class II.*—McKibbin, Beatty, Ferguson, Finnie. *Class III.*—McLaren (D. T.), Paradis.

*Aegrotat.*—MacKinnon, Thompson (F. W.).

SECOND YEAR.—*Class I.*—Laurie, McRae. *Class II.*—Thomas, MacKerras; Cape and Waterous, equal; Davidson (J. H.), Sheffield, Eaves, Patton, Dean. *Class III.*—Bacon and MacLennan, equal; Gisborne, Scott, Reaves, McLea; Hawker and Summa, equal.

## DESIGNING.

FOURTH YEAR.—(*Civil Engineering Course*).—*Class I.*—Killaly and Reinhardt, equal; Denis (T.) and Hare, equal. *Class II.*—Angus, Huestis, Dufresne (*Electrical Engineering Course*).—*Class I.*—Chase, Cunningham. *Class II.*—Trenholme and Wright, equal; Jaquays, Currie, Rutherford (S. F.). *Class III.*—None. (*Mechanical Engineering Course*).—*Class I.*—Smail, Gill. *Class II.*—Courtice, Bayfield, Hunter. *Class III.*—Kenny, Rutherford (G. S.), Clarke, Walkem, McDougall. (*Mining Engineering Course*).—*Class I.*—Rutherford (F.), Webb, Stewart, Mussen, Green.

## MECHANISM.

SECOND YEAR.—*Class I.*—McRae and Sheffield, equal; MacKerras, Laurie, Thomas, Eaves, Dean. *Class II.*—Patton, Archibald, Cape, Waterous. *Class III.*—Davidson (J. H.), Summa, Bacon, \*Hawker, Reaves, MacLennan, McLea, \*Scott.

## MACHINE DESIGN.

FOURTH YEAR.—(*Electrical Engineering Course*).—*Class I.*—Chase, Wright. *Class II.*—None. *Class III.*—Rutherford (S. F.), Jaquays, Trenholme. (*Mechanical Engineering Course*).—*Class I.*—Gill. *Class II.*—Hunter; Clarke and Kenny, equal; Courtice. *Class III.*—Walkem, Bayfield, Rutherford (G. S.).

THIRD YEAR.—*Class I.*—Stovel. *Class II.*—Macbean, White (F. H.) Macdonald (J. E.) and Pitcher, equal; Thomson (C.); Connal and Davidson (S.), equal; Macdonald (P. W.); Burnham and Campbell (A.), equal. *Class*

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\* To pass Supplemental in Sketching.

*III.*—Travis ; McLaren (D. T.) and Packard and Symmes, equal ; Haycock and McKibbin and Walters, equal ; Balfour, Finnie ; Chamberlain and Drinkwater, equal ; Yorston, Blair, Edward.

#### DYNAMICS OF MACHINERY.

**FOURTH YEAR.**—*Class I.*—Gill, Kenny. *Class II.*—Courtice and Wright, equal ; Chase, Clarke. *Class III.*—Trenholme, Hunter, Jaquays, Smail, Rutherford (G. S.), Walkem ; Rutherford (S. F.) and Bayfield, equal.

**THIRD YEAR.**—*Class I.*—Stovel, Connal. *Class II.*—Symmes, Burnham, Davidson (S.), Thomson (C.). *Class III.*—Sise (C. F.) ; Balfour and Campbell (A.) and Drinkwater and Haycock, equal ; McKibbin, Blair ; Ferguson and Macdonald (J. E.), equal ; Bovey, Macbean, Macdonald (P. W.), McLaren (D. T.), Paradis ; White and Yorston, equal ; Edward and Finnie and Travis, equal.

#### MECHANICAL ENGINEERING.

**FOURTH YEAR.**—Gill, Courtice. *Class II.*—Hunter and Kenny, equal. *Class III.*—Clarke ; Smail and Walkem and McDougall, equal ; Bayfield, Rutherford (G. S.).

#### THERMODYNAMICS.

**FOURTH YEAR.**—*Class I.*—Gill, Wright, Kenny ; Chase and Green, equal ; Courtice ; Jaquays and Stewart, equal. *Class II.*—Clarke, Webb, Killaly. *Class III.*—Hunter, Mussen, Hare, Dufresne, Huestis, Trenholme, Rutherford (F.) ; Bayfield and Rutherford (S. F.), equal ; Reinhardt and Rutherford (G. S.) and Walkem, equal ; Denis (T.).

#### THEORY OF STRUCTURES.

**FOURTH YEAR.**—*Class I.*—Hare. *Class II.*—Huestis. *Class III.*—Killaly, Denis (T.), Dufresne, Reinhardt, Angus.

**THIRD YEAR.**—*Class I.*—Stovel (Honours), Thomson (H. N.). *Class II.*—Connal ; Symmes and Thomson (C.), equal ; Finnie, White (F. H.), Macdonald (P. W.), Burnham, Campbell (A.) ; Sise (C. F.) and Walters, equal ; Drinkwater and Ferguson, equal ; Chamberlain and McKibbin, equal ; Macdonald (J. E.) ; Bovey and Haycock, equal ; Balfour and Edward, equal ; *Class III.*—Davidson (S.) and McLaren, equal ; Pitcher and Yorston, equal ; \*Beatty ; Bell (J. W.) and Packard, equal ; Macleod (G. R.), Travis, \*Paradis, Blair, Macbean, Ross, \*Dougall.

*Passed, Mackinnon, Newcombe.*

#### RAILROAD ENGINEERING.

**FOURTH YEAR.**—*Class I.*—Killaly. *Class II.*—Reinhardt, Huestis, Hare. *Class III.*—Denis, Dufresne, Angus.

**THIRD YEAR.**—*Class I.*—None. *Class II.*—Macleod (G. R.).

*Passed, Newcombe.*

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\*Supplemental in Paper II.



## HYDRAULICS.

FOURTH YEAR.—*Class I.*—Gill and Stewart, equal; Courtice. *Class II.*—Clarke, Jaquays, Chase, Green, Huestis, Wright, Hunter; Hare and Kenny, equal; McDougall (W.) and Walkem, equal; Webb; Rutherford (G. S.) and Rutherford (S. F.), equal; Mussen. *Class III.*—Rutherford (F.), Bayfield, Killaly, Trenholme, Reinhardt, Denis, Dufresne.

HYDRAULICS (*Honours*).

FOURTH YEAR.—(In order of merit), Gill, Stewart, Clarke, Wright, Chase, Jaquays.

## ELECTRICAL ENGINEERING.

FOURTH YEAR.—*Class I.*—Chase, Wright; Currie and Cunningham, equal. *Class II.*—Trenholme, Jaquays. *Class III.*—Rutherford (S. F.).

THIRD YEAR.—*Class I.*—Stovel, Thomson (C.), Macbean. *Class II.*—Macdonald (J. E.), Symmes, Davidson (S.). *Class III.*—Pitcher, Burnham; Travis and Walters, equal; Edward.

## LABORATORY WORK.

THIRD YEAR.—(*Cement Laboratory*, Civil Engineering Course).—*Class I.*—Macleod (G. R.), Angus.

*Passed.*—Newcombe.

THIRD YEAR.—(*Chemical Laboratory*, Mining Engineering Course).—*Class I.*—Bell (J. W.); Thomson (H. N.) and Turnbull, equal. *Class II.*—Dougall. *Class III.*—Hillary. (Practical Chemistry Course).—*Class I.*—Suter. *Class II.*—Drysdale.

SECOND YEAR.—(*Chemical Laboratory*, Mining Engineering Course).—*Class I.*—Young (G. A.), Atkinson (D. C. T.). *Class II.*—Davis; Ainley and MacLean (T. A.), equal; Butler, Atkinson (W. J.).

FIRST YEAR.—(*Chemical Laboratory*).—*Class I.*—Shaw, Moore (E. V.), Hyde (J. C.); Colpitts and Henderson, equal; Blaycock and Fraser (J. W.) and McLean (W. B.), equal; Rogers; Grier and McLaren (A. J.), equal; Kirkpatrick; Hyde (G. T.); Fraser (C. E.) and Ingraham, equal; Campbell (N. M.) and Morgan, equal. *Class II.*—Waller and Wenger and Yuile, equal; Young (W. M.); McMillan and Whyte (J. S.), equal; Wilson, Coussirat, Bowman; Gagnon and Peden, equal; McMaster, Fraser (H.); Pender and Porcheron, equal; Cornwall and Fetherstonhaugh and Moore (W. A.), equal; Denis (L.); Burgess and Nicholls, equal; Pergau; Hutchinson and Kane, equal; Campbell (F. W.) and Dargavel and Preston, equal; Davidson (W. A.), Stevens; Millar and Van Horne, equal.

FOURTH YEAR.—(*Electrical Laboratory*).—*Class I.*—Chase, Wright, Currie. *Class II.*—Jaquays. *Class III.*—Cunningham, Rutherford (S. F.), Trenholme.

THIRD YEAR.—(*Electrical Laboratory*).—*Class I.*—Stovel, Symmes, Thomson (C.). *Class II.*—Macdonald (J. E.); Davidson (S.) and Macbean, equal; *Class III.*—Chamberlain, Burnham, Packard, Sise (C. F.), Bovey; Edward and Pitcher and Walters, equal; Blair, Macdonald (P. W.), Travis.

FOURTH YEAR.—(*Geodetic Laboratory*).—*Class I.*—Hare and Huestis and Reinhardt, equal. *Class II.*—Denis (T.) and Killaly, equal; Angus, Dufresne.

FOURTH YEAR.—(*Hydraulic Laboratory*).—*Class I.*—Stewart and Wright, equal; Gill and Jaquays, equal; Chase, Mussen, Huestis, Clarke; Courtice and Webb, equal; Hunter and Smail, equal. *Class II.*—Green; Kenny and Rutherford (F.), equal; Dufresne; Bayfield and Denis (T.) and Rutherford (S.), equal; Killaly and McDougall, equal; Hare, Walkem. *Class III.*—Rutherford (G. S.), Trenholme, Reinhardt.

FIRST YEAR.—(*Mathematical Laboratory*).—*Class I.*—Hyde (G. T.); Colpitts and Young (W. M.), equal; Burgess and Campbell (N. M.) and Henderson and Kirkpatrick, equal; Moore (E. V.); Bowman and Denis (L.) and McLean (W. B.) and Pender and Shaw, equal; McLeod (N.) and Yuile, equal; Blaylock and Fraser (C. E.) and Gough and Grier and Rogers, equal; Dargavel and Fraser (H.) and Ingraham and Moore (W. A.) and Nicholls, equal; Waller and Wilson, equal; Davidson (W. A.) and Fraser (J. W.) and McMillan, equal; Fetherstonhaugh and Morgan and Peden and Stevens and Wenger, equal. *Class II.*—Coussirat and Hutchinson and Whyte (J. S.), equal; Gagnon; McLaren (A. J.) and McMaster and Pergau and Sise (E. F.), equal; Preston, Strathy; Austin and Willard, equal; Cornwall and Hyde (J. C.) and Kane and Parizeau, equal; Hickey; Donnelly and St. George, equal. *Class III.*—Cox and Hatchette, equal; Ramsay, Parks.

FOURTH YEAR.—(*Mechanical Engineering Laboratory*).—*Class I.*—Kenny. *Class II.*—Hunter. *Class III.*—Courtice, Gill, Walkem, Smail; McDougall and Rutherford (G. S.), equal; Clarke and Bayfield, equal.

FOURTH YEAR.—(*Mechanical Laboratory*).—*Class I.*—Courtice; Gill and Hunter, equal. *Class II.*—Kenny. *Class III.*—Bayfield and Rutherford (G. S.) and Smail, equal; McDougall; Clarke and Walkem, equal.

FOURTH YEAR.—(*Physical Laboratory*).—*Class I.*—Wright, Cunningham, Jaquays. *Class II.*—Chase, Currie. *Class III.*—Rutherford (S. F.), Trenholme.

THIRD YEAR.—(*Testing Laboratory*).—*Class I.*—Stovel, Thomson (H. N.). *Class II.*—Turnbull, Thomson (C.), Macbean; Symmes and Packard, equal; Burnham, Macdonald (J. E.); Connal and Macleod (G. R.), equal; Pitcher, Campbell (A.), McKibbin; Blair and Bell (J. W.), equal; White (F. H.). *Class III.*—Davidson (S.), Walters; McLaren (D. T.) and Yorston, equal; Haycock and Ross, equal; Edwards; Balfour and Paradis, equal; Macdonald (P. W.), Bovey; Ferguson and Finnie, equal; Sise (C. F.) and Dougall and Drinkwater, equal.

FOURTH YEAR.—(*Thermodynamic Laboratory*).—*Class I.*—Gill, Hunter. *Class II.*—Courtice and Kenny, equal; Smaill. *Class III.*—McDougall, Rutherford (G. S.), Walkem, Bayfield, Clarke.

#### SHOPWORK.

FOURTH YEAR.—*Class I.*—Hunter, Walkem, Bayfield, Gill, McDougall. *Class II.*—Courtice. *Class III.*—Clarke and Kenny, equal; Rutherford (G. S.), Smaill.

THIRD YEAR.—*Class I.*—None. *Class II.*—Archibald; Ferguson and Haycock, equal; Finnie; Sise (C. F.) and Symmes, equal; Travis, Campbell (A.); Macdonald (J. E.) and Stovel, equal; Blair. *Class III.*—Balfour and Thompson (F. W.), equal.

SECOND YEAR.—(*Civil and Mining Courses*).—*Class I.*—Macphail, Matheson, McCarthy. *Class II.*—Irving; Atkinson (W. J.) and Benny, equal; Atkinson (D. C. T.); Butler and MacLean (T. A.), equal. *Class III.*—Ainley; Bond and Young (G. A.), equal; Davis. (*Electrical and Mechanical Engineering Courses*).—*Class I.*—Patton; Dean and McRae, equal; Scott, Eaves, Thomas. *Class II.*—Cape and Hawker, equal; MacLennan and Porcheron, equal; Gisborne and MacKerras, equal; Waterous, Laurie, Sheffield, Davidson (J. H.). *Class III.*—Mitchell (N. C.), Bacon, McLea, Reaves; Corriveau and Mitchell (N. S.), equal; Summa, Ewan.

FIRST YEAR.—*Class I.*—Colpitts and Fraser (J. W.), equal; Gough, Austin, Hyde (G. T.), Burgess. *Class II.*—Ingraham, Young (W. M.); Donnelly and Preston and Wenger, equal; Wilson, Blaylock, Dargavel; Cornwall and Shaw, equal; Bowman and Grier and Peden, equal; Henderson and Yuile, equal; Davidson (W. A.) and Kirkpatrick, equal; Gagnon and McLean (W. B.) and McLeod (N.), equal; Coussirat. *Class III.*—Denis (L.) and Hyde (J. C.) and Mathers and St. George and Waller, equal; McLaren (A. J.), Fraser (H.); Fetherstonhaugh and Willard, equal; Campbell (F. W.) and Kane and Morgan, equal; Hunt, Fraser (C. E.); Campbell (N. M.) and McMillan and Moore (E. V.) and Pergau, equal; Hutchinson and Parks, equal; Hickey and Moore (W. A.) and Smith, equal; McMaster and Nicholls and Paterson and Rogers and Strathy, equal; McKenzie and Millar and Wilkins, equal; Pender, Howell, Hatchette, Redpath.

# Students of the University.

SESSION 1895-96.

McGILL COLLEGE.

FACULTY OF LAW.

## FIRST YEAR.

|                         |                   |                           |                     |
|-------------------------|-------------------|---------------------------|---------------------|
| Aylmer, Henry P.,       | Melbourne, Q      | Howard, Eratus Edwin,     | Frontenac, Q        |
| Burnet, Arthur,         | Farnham Centre, Q | Iles, Charles,            | Montreal            |
| Champoux, Charles,      | Montreal          | Kennedy, John R.,         | Hamilton, O         |
| Clay, Samuel,           | London, Eng.      | Marler, Herbert Meredith, | Montreal            |
| Elliott, Henry Johnson, | Montreal          | Pelland, Joseph A.,       | Berthier en Haut, Q |
| Hickson, James Claude,  | Montreal          | Rogers, Reginald H.,      | Alberton, P.E.I.    |
| Hingston, Wm. H., jun., | Montreal          | Semple, Geo. Hugh,        | Montreal            |
| Honan, Cornelius,       | Three Rivers, Q   | Sinn, George M.,          | Arnprior, O         |

## SECOND YEAR.

|                            |                   |                       |                    |
|----------------------------|-------------------|-----------------------|--------------------|
| Armstrong, Edgar N.,       | Montreal          | Duclos, Arnold W.,    | St. Hyacinthe, Q   |
| Bickerdike, Frank A. C.,   | Lachine, Q        | Ewing, Jos. Armitage, | Coaticooke, Q      |
| Bissonnette, Jos. E. A.,   | St. Hyacinthe, Q  | Jasmin, Pierre S.,    | Coaticooke, Q      |
| Bond, Wm. Langley,         | Montreal          | Kneeland, Abner W.,   | S. Stukeley, Q     |
| Boyd, Leslie H.,           | Montreal          | Lavery, Francis Jos., | Montreal           |
| Brossoit, Numa P.,         | Beauharnois, Q    | Mansur, Chas. Henry,  | Stanstead, Q       |
| Cole, Frederick E.,        | Montreal          | Montgomery, Geo. A.,  | Phillipsburg, Q    |
| Cook, John Wilson,         | Quebec            | Smyth, Wm. Oswald,    | Toronto, O         |
| Dickson, Ed. H. Trenholme, | Trenholmeville, Q | Stewart, Alex. M.,    | Edinburgh, Scotl'd |

## THIRD YEAR.

|                              |             |                               |                          |
|------------------------------|-------------|-------------------------------|--------------------------|
| Boyer, Louis, B.A., (Laval), | Montreal    | Mitchell, Victor Evelyn,      | London, Eng.             |
| Donahue, Wm., B.A.,          | Farnham, Q  | Mullin, Robt. T.,             | Leitchfield, Pontiac, Q. |
| Doucet, René Pothier,        | Montreal    | Surveyor, Ed., B.A., (Laval), | Montreal                 |
| Gamble, Wm., B.A.,           | Montreal    | White, Chas. Dickinson,       | Sherbrooke, Q            |
| Hanson, Albert C., B.A.,     | Barnston, Q |                               |                          |

## FACULTY OF MEDICINE.

## FIRST YEAR.

|                       |                      |                             |                       |
|-----------------------|----------------------|-----------------------------|-----------------------|
| Allen, W. C.,         | Hillsboro, N.B       | Howard, C. P.,              | Montreal              |
| *Armstrong, J. W.,    | Bristol, Q           | Jones, D. C.,               | Maitland, O           |
| Aylmer, A. L.,        | Montreal, Q          | Kernan, T. P., B.A.,        | Utica, N.Y            |
| Babcock, J. R.,       | Brockville, O        | *Laurie, E.,                | Montreal              |
| Beadie, W. D.,        | Lachine Locks, Q     | Law, R.,                    | Ottawa, O             |
| Bedard, J. A.,        | Richmond, Q          | Lester, C. W.,              | S. Durham, Q          |
| Belisle, J. R.,       | Nashua, N.H          | Leveque, J. T.,             | St. Boniface, Man     |
| Bonner, J. A.,        | New York City, N.Y   | Levy, A., B.A.,             | Montreal              |
| Bowles, C. T.,        | Ottawa, O            | Logie, A. E.,               | Chatham, N.B          |
| Bradley, J. H.,       | Charlottetown, P.E.I | Love, R. H.,                | Carleton Place, O     |
| Bradshaw, J. E.,      | Montreal             | †Malone, J. H.,             | Montreal              |
| Brannen, J. P.,       | Montreal             | Martin, J. J.,              | Montreal              |
| Brennan, F. A.,       | St. Albans, Vt       | Massie, J. C.,              | Cowansville, Q        |
| Burnett, P.,          | Montreal             | May, L. W.,                 | Ottawa, O             |
| Burnett, W. B., B.A., | Sussex, N.B          | Murphy, E. F.,              | St. John, N.B         |
| Burris, J. S.,        | Musquodoboit, N.S    | Macdonald, J. S.,           | Prince Edward Island  |
| Burrows, A. E.,       | Kingston, O          | Mackenzie, C. A.,           | Toronto, O            |
| †Butter, J. A.,       | Inverness, Q         | Mackinnon, I. W.,           | Charlottetown, P.E.I  |
| Cameron, L. G.,       | Ottawa, O            | McCombe, J.,                | Montreal              |
| Casselman, P. C.,     | Morrisburg, O        | *McConnell, R. E.,          | Montreal              |
| †Cleary, J. K.,       | Montreal             | McDougall A.,               | Clinton, O            |
| Conroy, R. J.,        | Peterboro, O         | McKay, J. G.,               | Morewood, O           |
| †Craig, A. F.,        | Montreal             | McKechnie, W. C.,           | Marquette, Man        |
| Cram, W. J.,          | Carleton Place, O    | †McLaren, W. S.,            | Orms town, Q          |
| Cummings, W. A.,      | Buckingham, Q        | McNally, D. A.,             | Abrams Village, P.E.I |
| Cunningham, F. J.,    | Montreal             | McNaughton, F. M. A., B.A., | Huntingdon, Q         |
| Cunningham, A. A.,    | Huntingdon, Q        |                             |                       |
| Cuzner, G.,           | Ottawa, O            | McNiece, T.,                | Carsonby, O           |
| Darché, C. E.,        | Danville, Q          | Nash, A. C.,                | Ogdensburg, N.Y       |
| Dandurand, L. H.,     | Montreal             | Nicholson, F. J., B.A.,     | Victoria, B.C         |
| Davis, J. W.,         | Windsor, O           | †Nichol, F. C.,             | Montreal              |
| *Dickson, W. H.,      | Pembroke, O          | Noble, E. C.,               | Potsdam, N.Y          |
| Delaney, R. E.,       | Springfield, Mass    | O'Brien, J. R., B.A.,       | Ottawa, O             |
| *Dixon, W. E.,        | Montreal             | O'Callaghan, M.,            | Kars, O               |
| Doull, A. E.,         | Montreal             | Paterson, A., B.A.,         | Montreal              |
| Drier, N. E.,         | Richmond Corners, Q  | Reynolds, F. L.,            | St. John, N.B         |
| Dyer, E. O., B.A.,    | Sutton, O            | *Roberts, A. B.,            | Lanark, O             |
| *Ells, R. R.,         | Ottawa, O            | Rochon, O. J., B.L.,        | Rockland, O           |
| Fitzgerald, C. T.,    | Harbor Breton, Nfld  | Ross, S. A.,                | Hintonburg, O         |
| Fourney, F. W., B.A., | Montreal             | Ryan, G. H. W.,             | Montreal              |
| Fuller, G. F. LeRoy,  | Sweetsburg, Q        | *Scriver, E. F.,            | Montreal              |
| Gaffney, J. A.,       | Bridgeport, Conn     | *Ship, M. L.,               | Montreal              |
| Galbraith, W. S.,     | Lethbridge, N.W.T    | Shore, R. A. A., B.A.,      | Toronto, O            |
| *Gardner, R. L.,      | Brockville, O        | Sutherland, W. H.,          | Sea View, P.E.I       |
| *Gilday, A. L. C.,    | Montreal             | Symmes, C. R.,              | Aylmer, Q             |
| Gillis, E. G.,        | Summerside, P.E.I    | *Thomas, J. W.,             | Montreal              |
| *Goodall, J. R.,      | Ottawa, O            | Thompson, G. H.,            | New Glasgow, N.S      |
| Gordon A. H.,         | St. John, N.B        | Tooke, F. T., B.A.,         | Montreal              |
| *Grace, A. H.,        | Montreal             | Turnbull, T.,               | Stratford, O          |
| Gray, C. F. A.,       | Montreal             | Weed, H. T.,                | West Union, Iowa      |
| Greene, E.,           | Leitrim, O           | Wheeler, F. C.,             | Richford, Vt          |
| Hardisty, R.,         | Montreal             | Whillans, H. A.,            | Hintonburg, O         |
| Harris, J. A.,        | Montreal             | *White, E. H.,              | Montreal              |
| †Harwood, F. A.,      | Vaudreuil, Q         | Wilkins, W. A.,             | Montreal              |
| Higgins, C. P.,       | Victoria, B.C        | Witherbee, W. D.,           | Potsdam, N.Y          |
| Hogan, A. E.,         | Charlottetown, P.E.I | Wood, J. H.,                | Montreal              |
| Holland, C. F.,       | St. Eleanors, P.E.I  | Woodley, J. W.,             | Rockland, O           |



## SECOND YEAR.

|                        |                       |                        |                   |
|------------------------|-----------------------|------------------------|-------------------|
| Alley, G. T.,          | Charlottetown, P.E.I. | †Kent, E. E.,          | St. Ann's, Q      |
| Banfill, S. A.,        | Magog, Q              | Kiernan, W. H., B.A.,  | Three Rivers, Q   |
| Barlow, W. L., B.A.,   | Montreal              | King, J. W. DeC.,      | Peterboro, O      |
| Bartlett, G. W.,       | Brigus, Nfld          | Lamb, J. A.,           | Ottawa, O         |
| Barry, F. A.,          | Montreal              | Lang, A. A. J.,        | Almonte, O        |
| Bayfield, G. E.,       | Charlottetown, P.E.I. | Loeb, A. A.,           | Montreal          |
| Beaulieu, J. F.,       | Quebec                | Lynch, W. W.,          | Knowlton, Q       |
| Beattie, R. F.,        | 'Economy, N.S         | Mellon, P. B.,         | Ottawa, O         |
| Bell, J.,              | New Glasgow, N.S      | Mooney, M. J.,         | Inverness, Q      |
| †Berwick, D. J.,       | Farnham, Q            | Morris, T. E.,         | St. John, N.B     |
| Birkett, F. W.,        | Ottawa, O             | Moss, J. N.,           | Montreal          |
| Blackett, J. W., B.A., | Orms town, Q          | Mousseau, E. A.,       | Hull, Q           |
| Brown, G. T.,          | Cantley, Q            | †Munroe, J. A.,        | S. Ely, Q         |
| Brown, C. H., B.A.,    | Carleton Place, O     | Mussen, A. T.,         | Lachine, Q        |
| Campbell, V. B.,       | Finch, O              | Myers, D. A.,          | Prentice, Wis     |
| Chisholm, J.,          | New Glasgow, N.S      | Macaulay, J. F.,       | St. John, N.B     |
| Corbet, G. G.,         | St. John, N.B.        | Maclean, J. N.,        | Sarnia, O         |
| Corcoran, J. A.,       | Warden, Q             | Macoun, H. J. G.,      | Montreal          |
| Covert, A. M.,         | Grand Manan, N.B      | McDonald, P. B.,       | Morrisburg, O     |
| Cushing, H. B., B.A.,  | Montreal              | McLean, J. R., B.A.,   | Arnprior, O       |
| Dalpe, W. H., B.A.,    | Montreal              | McLennan, P. A.,       | Lancaster, O      |
| Davidson, C.,          | Montreal              | McLeod, J.,            | Hartsville, P.E.I |
| Deane, R. B.,          | Regina, N.W.T         | McMurtry, A. L.,       | Bowmanville, O    |
| Dearden, D. G. A.,     | Richmond, Q           | Ogilvy, C., B.A.,      | Montreal          |
| Dickson, S. M., B.A.,  | Montreal              | Oneil, C. A.,          | Waterbury, Conn   |
| Donnelly, C. C.,       | St. Catharines, O     | Outhouse, J. S., B.A., | St. Andrews, N.B  |
| Douglas, J. A.,        | Chatham, O            | O'Shaughnessy, L. J.,  | Oldham, N.S       |
| Duncan, R. G.,         | Montreal              | Patterson, R. U.,      | Baltimore, Md     |
| Dunn, C. B.,           | Abercorn, Q           | Patterson, F. P.,      | St. Martin's, N.B |
| Duval, J. L.,          | Grand Ligne, Q        | Peters, C. A.,         | St. John's, Nfld  |
| Fagan, G. A.,          | N. Adams, Mass        | Pigeon, W. H.,         | Peterborough, O   |
| Fairie, J. A.,         | Montreal              | Pittis, H.,            | Plainfield, N.J   |
| Fawcett, R.,           | †Jamaica, West Indies | Powers, M., B.A.,      | Ottawa, O         |
| Finnie, J. H.,         | Montreal              | Rajotte, E. C. F.,     | Montreal          |
| Forbes, A. M.,         | Montreal              | Rose, W. O.,           | Lakeville, P.E.I  |
| Fox, A. C. L.,         | Winnipeg, Man         | Ross, W. J.,           | Martintown, O     |
| Francis, B.,           | Sydney Mines, C.B     | Rutherford, R. M.,     | Hawkesbury, O     |
| Fraser, F. C., B.A.,   | Montreal              | Schwartz, H. J.,       | Quebec            |
| Galbraith, H. H.,      | Westmount, Q          | Sihler, W. F.,         | Simcoe, O         |
| Gillies, B. W. D.,     | Teeswater, O          | Smith, A. M., B.A.,    | Petitcodiac, N.B. |
| Grace, N.,             | Montreal              | Snyder, A. E. W.,      | Coaticooke, Q     |
| Green, F. W.,          | †Victoria, B.C        | Soden, A. E.,          | Petitcodiac, N.B  |
| Hall, W. T.,           | Montreal              | Stansby, F. C.,        | Valparaiso, Chili |
| Harvey, F. W., B.A.,   | Abercorn, Q           | Stockwell, H. P.,      | Danville, Q       |
| Haydon, C. H.,         | St. John, N.B         | Tansey, O. J.,         | Montreal          |
| Heney, A. E.,          | Montreal              | Telford, R.,           | Freelton, O       |
| Houston, J. C.,        | New Glasgow, P.E.I    | Tiffany, G. S.,        | Alexandria, O     |
| Howden, G. T.,         | Montreal              | *Todd, J. L.,          | Victoria, B.C     |
| Hudson, H. P.,         | Chelsea, Q            | Trites, C. B.,         | Petitcodiac, N.B  |
| Irving, L. E. W.,      | Toronto, O            | Walker, P. McH.,       | Grafton, N.D      |
| Jamieson, W. R.,       | Ottawa, O             | West, J., M.A.,        | Montreal          |
| Jones, F. B.,          | Montreal              | Whittan, D. A.,        | Ottawa, O         |
| †Kennedy, W. G.,       | Montreal              | Wilkins, F. F.,        | Montreal          |
| Keenan, F. T. J.,      | Lindsay, O            | Wood, D. F.,           | Faribault, Minn   |

\*rDouble Course.

† Dental Student.

‡ Partial Student.

## THIRD YEAR.

|                        |                      |                         |                        |
|------------------------|----------------------|-------------------------|------------------------|
| Barclay, J.,           | Montreal             | Morse, L. H., B.A.,     | Glen Sandfield, O      |
| Bearman, G. P.,        | Bell's Corners, O    | Macdonald, D. J.,       | Whycocomah, C.B.       |
| Brears, C. F.,         | Montreal             | MacDougall, G. P.,      | Summerside, P.E.I      |
| Brown, W. K.,          | Quebec               | MacLeod, E. E.,         | Vancouver, B.C         |
| Brown, C. L., B.A.,    | Port Lewis, Q        | McCabe, J. A., B.A.,    | Windsor Mills, Q       |
| Burrell, R. H.,        | Yarmouth, N.S        | McCallum, E.,           | Maxville, O            |
| Campbell, H. C.,       | Russell, O           | McDougall, J. G.,       | Blue Mountain, N.S     |
| Campbell, I. G.,       | Montreal             | McElroy, A. S.,         | Richmond, O            |
| Darche, J. A.,         | Sherbrooke, Q        | McKinnon, F. W.,        | Vankleek Hill, O       |
| Dean, W. E.,           | Toronto, O           | McLaren, R. W.,         | St. Raphael's, O       |
| Delmage, F. W., B. A., | St. Mary's, O        | McLennan, A. A.,        | Lancaster, O           |
| Doyle, J. J.,          | Halifax, N.S         | McNally, W. P.,         | Abram's Village, P.E.I |
| Eberts, E. M. von      | Winnipeg, Man        | McRae, W. R.,           | Baddeck, C.B           |
| Ferguson, W. R.,       | Toronto, O           | McRae, J. D.,           | Glen Nevis, O          |
| Foster, G. M.,         | Pembroke, O          | O'Reilly, R. H.,        | Ottawa                 |
| Foster, A. L.,         | Ottawa               | Palmer, A. J.,          | Buckingham, Q          |
| Gadbois, F. A.,        | Sherbrooke, Q        | Pallister, W. T.,       | Guelph, O              |
| Garrett, L.,           | Montreal             | Pennoyer, A. R.,        | Cookshire, Q           |
| Gilday, F. W.,         | Montreal             | Poussette, W. C.,       | Peterboro, O           |
| Gladman, F. A.,        | Lindsay, O           | Prodrick, W. S.,        | Ottawa                 |
| Gordon, G. S.,         | Halifax, N.S         | Purvis, B. H.,          | Montreal               |
| Gourley, T. A.,        | Eganville, O         | Ritchie, A. A.,         | Dalhousie, N.B         |
| Gurd, C. C.,           | Montreal             | Robert, G. C.,          | Holyoke, Mass          |
| Harding, E. S., B.A.,  | Amherst, N.S         | Robert, A. N.,          | Holyoke, Mass          |
| Harvey, F. C., B.A.,   | Wolfville, N.S       | Robertson, A. R.,       | Arnprior, O            |
| Hayden, E. W., B.A.,   | Cobourg, O           | Robertson, H. M.,       | Chatham, O             |
| Hurdman, H. H. H.,     | Ottawa               | Robertson, D. McD.,     | Perth, O               |
| Jackson, F. L.,        | Westmount, Q         | Rogers, F. E.,          | Brighton, O            |
| Johnston, W.,          | Charlottetown, P.E.I | Roy, J. J.,             | New Glasgow, N.S       |
| Johnston, J. A.,       | Kinkola, P.E.I       | Scanlan, H.,            | Gloucester, Mass       |
| Jost, A. C.,           | Guysboro, N.S        | Skeels, A. A., B.A.,    | Montreal               |
| Kerr, R. A.,           | Montreal             | Smith, H.,              | Acadia Mines           |
| Keenan, C. B.,         | Ottawa               | Sparrow, C. J.,         | Alexandria, O          |
| Kirby, H. S.,          | Ottawa               | Stanfield, H. M., B.A., | Truro, N.S             |
| Laidley, I. H.,        | Montreal             | Sutherland, G. R.,      | Hodson, N.S            |
| Laing, A. L.,          | Montreal             | St. Pierre, A. D.,      | Ripon, Q               |
| LaRue, H. A.,          | Quebec               | Thomas, J. E.,          | Montreal               |
| Lennon, H., B.A.,      | Montreal             | Thomas, H. W.,          | Montreal               |
| LeTouzel, J. R.,       | Goderich, O          | Thompson, J. A.,        | Kinnear's Mills        |
| Lockary, J. L.,        | St. Stephen, N.B     | Tierney, J. A.,         | Fallowfield, O         |
| Long, C. B.,           | Whitehall, N.Y       | Tozer, F. W.,           | Newcastle, N.B         |
| Lyster, H. F.,         | Richmond, Q          | Trainer, J. B.,         | Kelly's Cross, P.E.I   |
| Malloch, N.,           | Kenmore, O           | Wainwright, S. F. A.,   | St. Andrews, Q         |
| Maloney, M. J.,        | Eganville, O         | Wainwright, F. R.,      | Montreal               |
| Merkley, E. A.,        | Morrisburg, O        | Williams, E. J., B.A.,  | Montreal               |
| Midgley, R. J.,        | Woodstock, O         | Wilson, F. W. E.,       | London, O              |
| Morris, C. H., B.A.,   | Windsor, N.S         |                         |                        |

## FOURTH YEAR.

|                         |                |                          |                  |
|-------------------------|----------------|--------------------------|------------------|
| Archibald, E. W., B.A., | Montreal       | Church, H. M.,           | Montreal         |
| Argue, J. F.,           | Carp, O        | Churchill, J. L., B.A.,  | Lockport, NS     |
| Ault, C. R.,            | Montreal       | Colquhoun, P., B.A.,     | Montreal         |
| Bonnell, S.,            | Halifax, N.S   | Corbett, F. A. F., B.A., | Parrsboro, N.S   |
| Brathwaite, J. M.,      | Barbadoes, W.I | Craig, R. H.,            | Montreal         |
| Brunelle, P.,           | Lowell, Mass   | Crocket, A. P.,          | Fredericton, N.B |
| Carron, F. B.,          | Brockville, O  | Curran, T. J.,           | Montreal         |
| Church, C. H.,          | Montreal       | Deacon, G. R.,           | Stratford, O     |

|                        |                        |                         |                         |
|------------------------|------------------------|-------------------------|-------------------------|
| Dewar, J. E.,          | Glen Sandfield, O      | Mowatt, W., B.A.,       | Montreal                |
| Donahoe, M.,           | Cardigan Bridge, P.E.I | McCartney, F. W.,       | Montreal                |
| Drum, L., B.A.,        | Quebec                 | Macaulay, J. J. F.,     | River Dennis, N.S       |
| Duckett, F. J.,        | Montreal               | Macpherson, D.,         | Montreal                |
| Dunbar, W. R.,         | Abercrombie, N.S       | MacTaggart, D.D., B.A., | Montreal                |
| Edwards, A. F.,        | Thurso, Q              | McAllister, D. H.,      | Belle Isle, N.B         |
| Elliott, F. B.,        | Mayfair, O             | McArthur, A. W.,        | Williamstown, O         |
| Ellis, G. H.,          | Dundela, O             | McDonald, H. K.,        | Pictou, N.S             |
| Ewan, R. B.,           | Montreal               | McEwen, D.,             | St. Elmo, O             |
| Ferguson, J. A.,       | Smith's Falls, O       | McGannon, A. V.,        | Brockville, O           |
| Findlay, C.,           | Hamilton, O            | Oppenheimer, S. S.,     | Vancouver, B.C          |
| Fish, E. C.,           | Newcastle, N.B         | Patrick, D.,            | Montreal                |
| Fisk, W. M.,           | Abbotsford, Q          | Prescott, A. H.,        | Queensbury, N.B         |
| Fraser, A. D.,         | Breadalbane, O         | Robertson, W. A. T.,    | Howick, Q               |
| Fraser, H. B., B.A.,   | Westmeath, O           | Robins, G. D., B.A.,    | Montreal                |
| Foss, A. F.,           | Sherbrooke, Q          | Ross, R. O., B.A.,      | Rossville, N.S          |
| Goltman, A.,           | Montreal               | Ryan, J. P.,            | Portage la Prairie, Man |
| Grant, A. J.,          | Pembroke, O            | Ryan, E. J.,            | St. Kitts, W.I          |
| Grant, D.,             | Pictou, N.S            | Scott, W. T.,           | Montreal                |
| Hartin, G.,            | Bell's Corners, O      | Seaton, J. S.,          | St. John, N.B           |
| Healy, D. J.,          | Toronto, O             | Secord, J. H.,          | Summerside, P.E.I       |
| Hogan, E. V., B.A.,    | Weymouth, N.S          | Smellie, W.,            | Huntingdon, Q           |
| Howell, W. B.,         | Montreal               | Smith, R. A.,           | Durham, O               |
| Hughson, E. R.,        | Blenheim, O            | Shaw, R. B.,            | Cove Head, P.E.I        |
| Irvine, A. D.,         | Westmount, Q           | Slack, T. J.,           | Waterloo, Q             |
| Johnston, F. E. L.,    | Delaware, O            | Smith, S. R. B.,        | Brighton, O             |
| Keith, H. W.,          | Havelock, N.B          | Smith, R. E. G., B.A.,  | Woodstock, N.B          |
| Kelly, J. K.,          | Almonte, O             | Smyth, W. H., B.A.,     | Montreal                |
| Kemp, H. G.,           | Brighton, O            | Spearman, F. S.,        | Hemmingford, Q          |
| Kendrick, W. N.,       | Austin, Minn., U.S.A   | Stackhouse, O. C. S.,   | Lachute, Q              |
| Lambly, W. D.,         | Inverness, Q           | Staples, C. A., B.A.,   | Stillwater, Minn        |
| Lauder, S. E.,         | Durham, O              | Steeves, C. P., B.A.,   | Lr. Coverdale, N.B      |
| Lee, F. J.,            | Port Hope, O           | Sutherland, J. A.,      | River John, N.S         |
| Leslie, P. C.,         | Montreal               | Tees, J., B.A.,         | Montreal                |
| Lynch, D. P.,          | Chapleau, Q            | Tetreau, T.,            | Lawrence, Mass          |
| Martin, R. H.,         | Chatham, O             | Thomson, F. L.,         | Perth, O                |
| Mason, R.,             | Dalesville, Q          | Tupper, T. S.,          | Fredericton, N.B        |
| Milburn, J. A.,        | Peterboro, O           | Warren, J. F.,          | Harper, O               |
| Mitchell, R. W., B.A., | Montreal               | Wheeler, F. H.,         | Florenceville, N.B      |
| Moffatt, W. A.,        | Orms town, Q           | White, R.,              | Pembroke, O             |
| Moles, E. B.,          | Arnprior, O            | Wood, W. S.,            | Faribault, Minn., U.S.A |
| Morse, L. R., B.A.,    | Lawrencetown, N.S      |                         |                         |

## FACULTY OF ARTS.

### *Undergraduates.*

#### FIRST YEAR.

| <i>Names.</i>       | <i>School.</i>                    | <i>Residence.</i> |
|---------------------|-----------------------------------|-------------------|
| Baker, Geo. P.,     | St. Paul's School, Concord, N.H., | Yarmouth, N.S     |
| Baker, Harry G.,    |                                   | Berthier, Q       |
| Brown, Walter G.,   | Huntingdon Academy,               | Athelstane, Q     |
| Bruce, Guy O. T.,   | Huntingdon Academy,               | Huntingdon, Q     |
| Burke, Edmund A.,   | Bishop's Coll. School,            | Montreal          |
| Burton, Henry T.,   | Upper Canada College,             | Montreal          |
| Cameron, Arch. G.,  | M. H. S.,                         | Montreal          |
| Cotton, Chas. M.,   | Grande Ligne, Q.,                 | Swetsburg, Q      |
| Cumming, W. Gordon, | M. H. S.,                         | Montreal          |

|                        |                                      |                     |
|------------------------|--------------------------------------|---------------------|
| Cushing, T. Hubert,    | Montreal Collegiate Institute        | Montreal            |
| DeWitt, Jacob,         | Montreal Collegiate Institute,       | Montreal            |
| Douglass, Fred. C.,    | Montreal Collegiate Institute,       | Montreal            |
| Duguid, Robert C.,     | M. H. S.,                            | Montreal            |
| Edward, Arch. T.,      | Montreal Collegiate Institute,       | Montreal            |
| Ells, Hugh,            | Ottawa Collegiate Institute,         | Ottawa              |
| Ferguson, Colin C.,    | Prince of Wales College, P.E.I.      | Marshfield, P.E.I.  |
| Goodall, Jas. R.,      | Ottawa University,                   | Ottawa              |
| Hardisty, Richard,     |                                      | Montreal            |
| Henderson, Ernest H.,  | Huntingdon Academy,                  | Franklin Centre     |
| Holland, Thos. B.,     | Montreal Diocesan Theological Coll., | London, Eng         |
| Ireland, Angus A.,     | Montreal Diocesan Theological Coll., | Montreal            |
| Johnson, R. De Lancey, | Montreal Collegiate Institute,       | Montreal            |
| Keith, Henry J.,       | Smith's Falls H. S.,                 | Smith's Falls, O    |
| Laurie, Ernest,        | M. H. S.,                            | Montreal            |
| Lee, Hy. S.,           | Private Tuition,                     | Kamloops, B.C       |
| Lundie, John Alex.,    | M. H. S.,                            | Montreal            |
| McClung, Robert K.,    | Hamilton Collegiate Institute        | Kingsbury, Q        |
| McDonald, Paul A.,     | Huntingdon Academy,                  | St. Agnes de Dundee |
| McKenzie, Bertram S.,  | Coll. Inst., London, O.,             | London, O           |
| McLeod, John B.,       | Prince of Wales College,             | Springton, P.E.I    |
| Mathers, Wm. R.,       |                                      | St. John, N.B       |
| Millar, W. Kinlock,    | Pembroke H. S.,                      | Pembroke, O         |
| Oswald, Malcolm C.,    | Abingdon S., Montreal,               | Montreal            |
| Patch, Frank S.,       | M. H. S.,                            | Montreal            |
| Phillips, Chas. E. H., | Montreal Collegiate Institute,       | Montreal            |
| Rice, Horace G.,       | Woodstock Collegiate Institute,      | New Durham, O       |
| Roberts, Alex. B.,     | Almonte H. S.,                       | Lanark, O           |
| Robertson, Lemuel,     | Prince of Wales College, P.E.I.,     | Marshfield, P.E.I   |
| Scriver, Ernest Fred., | Montreal H. S.,                      | Hamilton, O         |
| Shaw, Leonard D.,      | Davenport School, St. John, N.B.,    | St. John, N.B       |
| Skinner, Waldo W.,     | Davenport S. & U. C. College,        | St. John, N.B       |
| Smith, E. Victor,      | Albert College, Belleville,          | Brussels            |
| Stewart, Donald,       | Almonte H. S.,                       | Dunbar, O           |
| Stuart, James,         | Huntingdon,                          | Athelstan, Q        |
| Vipond, Ernest E.,     | Montreal Collegiate Institute,       | Montreal            |
| Wainwright, Arnold,    | M. Coll. Inst.,                      | Montreal            |
| White, E. Hamilton,    | Abingdon School, Monreal,            | Montreal            |

## SECOND YEAR.

| <i>Names.</i>             | <i>School.</i>                           | <i>Residence.</i> |
|---------------------------|------------------------------------------|-------------------|
| Bates, C. John L.,        | Vankleek Hill H. S.,                     | L'Orignal, O      |
| Bishop, W. Gordon,        | Montreal Collegiate Institute,           | Montreal          |
| Bruce, John C.,           | Huntingdon Academy,                      | Huntingdon, Q     |
| Campbell, J. Aug. Ewat.,  | Montreal Collegiate Institute,           | Montreal          |
| Colby, Jno. Child,        | Montreal Collegiate Institute,           | Stantead, Q       |
| Costigan, Jno. Wm.,       | M. H. S.,                                | Montreal          |
| Dalglish, Robert Wallace, | Huntingdon Academy,                      | Huntingdon, Q     |
| Duff, Alex. H.,           | Montreal Collegiate Institute,           | Montreal          |
| Evans, John Henry,        | Montreal Collegiate Institute,           | Montreal          |
| Gardner, Wm. A.,          | Huntingdon Academy,                      | Huntingdon, Q     |
| Gilday, Arch. L. C.,      | M. H. S.,                                | Montreal          |
| Grace, Arch. H.,          | Ref. Epis. Theol. Seminary, Phila, U.S., | Montreal          |
| Guthrie, Norman,          |                                          |                   |
| Heaney, Wm. B.,           | Montreal Diocesan Theol. College,        | Danford Lake, Q   |
| Heine, M. Casewell,       | Leal School, N.J., U.S.,                 | New York City     |
| Larmont, G. E.,           | M. H. S.,                                | Montreal          |
| Leet, Merrick A.,         | McGill Normal School,                    | Castlebar, Q      |
| Leney, John Muirhead,     | M. H. S.,                                | Montreal          |



|                           |                                |                     |
|---------------------------|--------------------------------|---------------------|
| Luttrell, Henry P.,       | M. H. S.,                      | Montreal            |
| McConnell, Robert Ernest, | M. H. S.,                      | Montreal            |
| McGregor, Jas. Albert,    | Huntingdon Academy,            | Huntingdon, Q       |
| McLeod, Hy. Stamford,     | Prince of Wales College,       | Dunstaffnage, P.E.I |
| McLaren, A. Henderson,    | Huntingdon Academy,            | Huntingdon, Q       |
| Meyer, John B.,           | Senior S. & Private Tuition,   | Montreal            |
| Moore, Percy T.,          | M. H. S.,                      | Montreal            |
| Munn, D. Walter,          | Quebec High School,            | Quebec              |
| Paterson, Edwin R.,       | St. Francis College,           | Montreal            |
| Paterson, Robert Childs,  | Montreal Collegiate Institute, | Montreal            |
| Place, Edson G.,          | Stanstead College,             | Millington, Q       |
| Prudham, W. W.,           | Waterdown H. S.,               | Waterdown, O        |
| Ross, Arthur B.,          | Mt. Hermon, Mass.,             | Montreal            |
| Ross, Wm. Walter,         | McGill Normal School,          | Hopetown, Q         |
| Ship, Moses,              | M. H. S.,                      | Montreal            |
| Stephens, J. Grongar.,    | University College of Wales,   | New Rocklands, Q    |
| Tarleton, B. B.,          | Private Tuition,               | Montreal            |
| Thomas, J. Wolferstan,    | Bishop's College School,       | Montreal            |
| Thomson, Jas. Richard,    | Sarnia Collegiate Institute,   | Kinnear's Mills, Q  |
| Todd, J. L.,              | Upper Canada College,          | Victoria, B.C       |
| Turner, Henry H.,         | Carleton Place H. S.,          | Appleton, O         |
| Turner, Wm. D.,           | Almonte H. S.,                 | Appleton, O         |
| Vineberg, Abraham,        | M. H. S.,                      | Montreal            |
| Worth, Fulton J.,         | Pictou Academy,                | Wellington, B.C     |

## THIRD YEAR.

|                         |                  |                        |                      |
|-------------------------|------------------|------------------------|----------------------|
| Archibald, Sam. G.,     | Montreal         | Mackay, Malcolm,       | Montreal             |
| Armstrong, W. J. Alex., | Bristol, Q       | Macmillan, Talm. R.,   | Newhaven, P.E.I      |
| Boyce, W. S. P.,        | Norham, O        | Mallinson, Stephen H., | London, Eng          |
| Browne, John G.,        | Montreal         | Moore, Wm.,            | Lachute, Q           |
| Campbell, Ed. M.,       | Inverness, Q     | Ross, Alex. R.,        | Montreal             |
| Campbell, Roland P.,    | Westmount, Q     | Ricwat, Donald McK,    | Athelstan, Q         |
| Crack, H. Arthur,       | Kingsbury, Q     | Russel, Colin K.,      | Montreal             |
| DuBoyce, Percy C.,      | West Bolton, Q   | Ryan, Wm. A.,          | Three Rivers, Q      |
| Douglas, Robert J.,     | Earlton, N.S     | Saxe, John G.,         | Montreal             |
| Howard, A. Campbell P., | Montreal         | Stacey, Fred. W.,      | Montreal             |
| Ives, Charles K.,       | Stanstead, Q     | Stevenson, James,      | Montreal             |
| Johnston, Wallace,      | Redgrave         | Trenholme, Arthur K.,  | Westmount, Q         |
| Ker, Robert Harold,     | Montreal         | Watson, Wm.,           | Kingsbury, Q         |
| McBurney, Chas.,        | Sawyer'sville, Q | Watters, Wm. H.,       | Lynn, Mass., U.S.    |
| McLean, Sam.,           | Bolsover, O      | Willis, John J.,       | Montreal             |
| McLeod, Donald M.,      | Springton, P.E.I | Wyman, Dan. B.,        | Chute au Blondeau, O |
| McMaster, Andrew R.,    | Montreal         | Wyman, Hiram B.,       | Chute au Blondeau, O |
| Macfarlane, Lawrence,   | Montreal         |                        |                      |

## FOURTH YEAR.

|                       |                   |                     |                  |
|-----------------------|-------------------|---------------------|------------------|
| Ashdown, Chas. R.,    | Toronto, O        | Pollock, Thos. I.,  | Hill Head        |
| Campbell, Geo. A.,    | Montreal          | Robertson, John C., | King's Co., N.B. |
| Coburn, David N.,     | Up: Melbourne, Q  | Ross, Herbert,      | Montreal         |
| Ferguson, Wm. S.,     | Marshfield, P.E.I | Saunders, Frank C., | Montreal         |
| Gordon, Alfred E.,    | Alberton, P.E.I   | Scott, Arthur P.,   | Montreal         |
| Howell, Arch. R.,     | Montreal          | Scrimger, J. Tudor, | Montreal         |
| Internoscia, Antonio, | Montreal          | Smiley, Francis C., | St. Lambert, Q   |
| Lennon, Walter S.,    | Montreal          | Turner, Wm. G.,     | Quebec           |
| McMartin, Thos. A.,   | Gr. Frenière, Q   | Watt, J. C.,        | Lanark, O        |
| Molson, Kenneth,      | Montreal          | Young, Stephen,     | Blakeney, O      |
| Patterson, W. Fred.,  | Montreal          |                     |                  |



*Partial Students.*

A Student who is not an Undergraduate, or Graduate, is called a Partial Student. The figure (1), (2) or (3), prefixed to a name, indicates that the Student takes a class in the corresponding year as well as in that where the name is found.

## FIRST YEAR.

|                                                  |                                                |
|--------------------------------------------------|------------------------------------------------|
| Anderson, Fred. J.,<br>Pt. St. Charles, Montreal | Johnston, John L.,<br>Toronto, O               |
| Angell, Ernest E.,<br>Mooers, N.Y., U.S.         | Kay, W. Fred,<br>Philipsburg, Q                |
| Blythe, J. J.,<br>Montreal                       | Kingsbury, H. C. W.,<br>Roxham, Q              |
| Boshart, Wm. P.,<br>Renfrew, O                   | Knowles, W. E.,<br>Pembroke, O                 |
| Bouin, Alex. L.,<br>Montreal                     | Lyster, M. R.,<br>Stayner, O                   |
| Burke, Maurice N.,<br>Montreal                   | McAteer, T. G.,<br>Stayner, O                  |
| Campbell, Geo. I.,<br>Aultsville, O              | McGregor, George<br>McLeod, E. N.,<br>Montreal |
| Campbell, Jas. D.,<br>Leaskdale, O               | Mackay, Hugh,<br>Boston, U.S                   |
| Charlesworth, J. W.,<br>Sheffield, Eng           | Mahon, Egbert,<br>Boston, U.S                  |
| Colborne, Jas. H.,<br>Hyndman, O                 | Mathieson, Peter,<br>Forresters Falls, O       |
| Crozier, Hugh G.,<br>Grand Valley, O             | Mick, D.,<br>Micksburg, O                      |
| Cunningham, A. A.,<br>Huntingdon, Q              | Mitchell, Walter G.,<br>Drummondville, Q       |
| Curdy, E.,<br>Port Vallais, Switzerland          | Munroe, Thos. A.,<br>Pt. St. Charles, Montreal |
| Dickson, W. Howard,<br>Pembroke, O               | Nichol, Jacob J.,<br>Toronto, O                |
| Dixon, Wm. E.,<br>Montreal                       | Pack, Edgar W.,<br>Cambrria, Q                 |
| Dorion, Walter A.,<br>Montreal                   | Parker, Dan. T.,<br>Montreal                   |
| Eagleson, Rd.,<br>Hazeldean, O                   | Paterson, Chas. S.,<br>Montreal                |
| Elliott, D. D.,<br>Haley's Station, O            | Poston, Jas. A.,<br>Montreal                   |
| Ferguson, J. R.,<br>Hawkesbury, O                | Rankin, A. G. Ernest,<br>Montreal              |
| Fraser, Simon L.,<br>Windsor Mills, Q            | Redpath, J. Clifford,<br>Montreal              |
| Frye, A. W.,<br>Brockville, O                    | Redpath, J. Herbert,<br>Montreal               |
| Gardner, R. Lorne,<br>Brockville, O              | Reid, Leslie W.,<br>Aberfoyle, O               |
| Greig, J. G.,<br>Westmount, Montreal             | Scott, Dan. J.,<br>Martintown, O               |
| Hall, Robt. F.,<br>Toronto, O                    | Sykes, C. A.,<br>Cobden, O                     |
| Halpenny, E. Wesley,<br>Bear Brook, N.S          | Williams, Walter J.,<br>Montreal               |
| Haughton, Chris.,<br>Reid's Mills, O             | Wilson, Thos. J.,<br>Shawville                 |
| Heal, G. Edgar,<br>Calbourne, Isle of Wight, Eng | Wilson, W. A.,<br>Shawville                    |

## SECOND YEAR.

|                                          |                                                      |
|------------------------------------------|------------------------------------------------------|
| Abram, Ls.,<br>Mont  cheroux, France     | Leith, Magnus J.,<br>Atherley, Q                     |
| Alexander, J. Lambert,<br>Bowmanville, O | Lough, D. A.,<br>Ottawa, O                           |
| (1) Angell, Ernest E.                    | McCleevy, R. K.                                      |
| (1) Blythe, J. J.                        | McGuire, John,<br>Stratford, O                       |
| Bradshaw, J. Ernest, Valleyfield, Q      | McIver, Wm. Evander                                  |
| Brown, Wm. T.,<br>Smith's Falls, O       | Macleon, Allan S.,<br>Scarp, Tarbert Harris, Scotl'd |
| (1) Charlesworth, J. W.                  | Mair, John A.,<br>Lanark, O                          |
| (1) Colburne, James H.                   | (1) Mick D.                                          |
| Coolican, A. T.                          | Miller, Robt. A.,<br>Lumley                          |
| Crombie, G. L.,<br>Fort Conlonge, O      | Monsinger, Hy.,<br>Winslow, O                        |
| (1) Crozier, Hugh G.                     | Nelson, Francis E.,<br>Wilcox, O                     |
| (1) Curdy, E.                            | Pollock, Albert F.,<br>Forest, O                     |
| Dorman, J. A.,<br>Seeley's Bay, O        | Rapson, Alex.,<br>Constance, O                       |
| Ferguson, Hugh, McLaren Depot, O         | (1) Reid, Leslie W.                                  |
| (1) Hall, Robt. F.                       | Rey, Jean                                            |
| (1) Halpenny, E. Wesley                  | Roberts, J.E., Earlestown, Lan., Eng                 |
| Halpenny, Wm.,<br>Smith Falls, O         | Rowan, Wm. L.,<br>Pembroke, O                        |
| (1) Haughton, Christopher                | Runnells, Arthur E.,<br>Egypt, Q                     |
| (1) Heal, G. Edgar                       | Sanderson, J. R.,<br>Brampton, O                     |
| Hill, W. H. P.,<br>Montreal              | Smythe, Theo. A.,<br>Jamaica, W.I                    |
| Jackson, J. A.                           | Suter, R. W.                                         |
| Johnson, J. Guy W.,<br>Montreal          | (1) Williams, Walter J.                              |
| (1) Knowles, W. E.                       | Williamson, A. W.,<br>Shawbridge                     |
| Leitch, Hugh,<br>Walkers, O              | Wilson, A. C.                                        |

## THIRD YEAR.

|                           |                  |                         |                |
|---------------------------|------------------|-------------------------|----------------|
| (2) Alexander, J. Lambert |                  | Kelly, Matt.,           | Hamilton, O    |
| (2) Angell, Ernest E      |                  | (2) LeRoy, O. E. (B.A.) |                |
| Anglin, W. W.,            | Battersea, O     | (1) McAteer, T. G.      |                |
| (2) Blythe, J. J.         |                  | (2) McGuire, John       |                |
| Brace, A. Philip,         | Hamilton, O      | (2) Maclean, Allan S.   |                |
| (2) Bradshaw, J. Ernest   |                  | (2) Mair, John A.       |                |
| (2) Brown, Wm. T.         |                  | (2) Mick, D.            |                |
| Cavers, C. A.,            | Homer, O         | (2) Monsignor, Ry.      |                |
| (2) Charlesworth, J. W.   |                  | (2) Nelson, Francis E.  |                |
| (2) Col' urne, Jas. H.    |                  | (2) Pollock, Albert F.  |                |
| (1) Cunningham, A. A.     |                  | Quincy, J. A.,          | Mallorytown, O |
| (2) Dorman, J. A.         |                  | (2) Rapson, Alex.       |                |
| (1) Elliott, D. D.        |                  | (2) Reid, L. W.         |                |
| (1) Frye, A. W.           |                  | (2) Roberts, J. E.      |                |
| (2) Hall, Robert F.       |                  | (2) Rowan, W. L.        |                |
| (2) Halpenny, E. Wesley   |                  | (2) Runnells, Arthur E. |                |
| (2) Halpenny, William     |                  | (2) Sanderson, J. R.    |                |
| (2) Heal, G. Edgar        |                  | Watt, R. G.,            | Lanark Village |
| Hill, Harry,              | Smith's Falls, O | (2) Williams, Walter J. |                |
| (2) Hill, W. H. P.        |                  | (2) Williamson, A. W.   |                |
| Horsey, Harold I.,        | Kingston, O      | (2) Ziegler, J. A.,     | Berlin, O      |

## FOURTH YEAR.

|                         |            |                        |             |
|-------------------------|------------|------------------------|-------------|
| (3) Anglin, W. W.       |            | (3) Kelly, Matt.       |             |
| Belton, A. J.,          | Clayton, O | (2) Lough, D. A.       |             |
| (2) Brace, A. Philip    |            | (3) McIntosh, D. S.    |             |
| (1) Campbell, George I. |            | (2) Miller, Robt. A.   |             |
| (3) Cavers, C. A.       |            | Oke, John J.,          | Oka, Q      |
| (2) Crozier, Hugh G.    |            | (3) Pollock, Albert F. |             |
| (1) Eagleson, Rd.       |            | (3) Quincy, J. A.      |             |
| (3) Elliott, D. D.      |            | Shaw, E. J.,           | Avonmore, O |
| (2) Ferguson, Hugh      |            | Smith Wm. Arthur,      | Brussels, O |
| (1) Fraser, Simon L.    |            | (2) Smythe, Theo. A.   |             |
| (3) Frye, A. W.         |            | (1) Sykes, C. A.       |             |
| (2) Haughton, Chris.    |            | (2) Suter, R. W.       |             |
| (3) Hill, Harry         |            | (3) Watt, R. G.        |             |
| (3) Hill, W. H. P.      |            | (3) Ziegler, J. A.     |             |
| (3) Horsey, Harold I.   |            | (2) Williamson, A. W.  |             |

B.A.

St. Andrews East  
Pleasant Bay, Inverness Co., N.S  
Westmount, Montreal

## DONALDA DEPARTMENT.

## SPECIAL COURSE FOR WOMEN.

*Undergraduates.*

## FIRST YEAR.

| <i>Name.</i>          | <i>School.</i>                 | <i>Residence.</i> |
|-----------------------|--------------------------------|-------------------|
| Armstrong, Catherine, | McGill Normal School,          | Bristol, Q        |
| Finley, Kathleen E.,  | Trafalgar Institute,           | Montreal          |
| Holiday, Annie,       | Montreal Collegiate Institute, | Rawdon, Q         |

|                      |                              |                             |
|----------------------|------------------------------|-----------------------------|
| Hurst, Isabel M.,    | M. G. H. S.,                 | Montreal                    |
| Johnson, Helena,     | Private Tuition,             | Montreal                    |
| King, Christina C.,  | Sarnia Collegiate Institute, | Sarnia                      |
| McDougall, Louise,   | M. G. H. S.,                 | Montreal                    |
| McGill, J. Winifred, | Ottawa Collegiate Institute, | Ottawa, O                   |
| Parks, Margaret,     | Victoria School,             | Mt. Pleasant, St. John, N.B |
| Potter, Lucy E.,     | McGill Normal School,        | New York, N.Y               |
| Radford, Janet I.,   | M. G. H. S.,                 | Montreal                    |
| Reid, Lena McK.,     | M. G. H. S.,                 | Montreal                    |
| Scrimger, Anna M.,   | Trafalgar Institute,         | Montreal                    |
| Tighe, Sarah C. W.,  | Cote St. Antoine Academy,    | Westmount, Montreal         |

## SECOND YEAR.

| <i>Name.</i>             | <i>School.</i>                  | <i>Residence.</i> |
|--------------------------|---------------------------------|-------------------|
| Bourke-Wright, K. M. H., | University College Aberystwyth, | Wales, Ireland    |
| Brooks, Harriet,         | Seaforth Collegiate Institute,  | Sherbrooke, Q     |
| Cameron, Frances M. T.,  | Trafalgar Institute,            | Kingston, O       |
| Carr, Muriel B.,         | G. H. S., St. John, N.B.,       | St. John, N.B     |
| Codd, Grace,             | Waterloo Academy,               | Waterloo, Q       |
| Cowan, Jean P.,          | McGill Normal School,           | Montreal          |
| Dover, Mary V.,          | Private Tuition,                | Peterboro, O      |
| Jordan, Florence M.,     | M. G. H. S.,                    | Montreal          |
| Kneen, Grace A.,         | M. G. H. S.,                    | Montreal          |
| Nunns, Jennie E.,        | Stanstead Wesleyan College,     | Coaticooke, Q     |
| Pearson, Katie C.,       | M. G. H. S.,                    | Montreal          |
| Reid, Elizabeth M.,      | McGill Normal School,           | Montreal          |
| Reynolds, M. Edna,       | Queen's University,             | Montreal          |
| Shaw, A. Louise,         | McGill Normal School,           | Montreal          |
| Steen, Alice G.,         | McGill Normal School,           | Farran's Point, Q |
| Van Vliet, M. Leonie,    | Stanstead Wesleyan College,     | Lacolle, Q        |
| Walker, Laura F. M.,     | Private Tuition,                | Montreal          |

## THIRD YEAR.

| <i>Names.</i>        | <i>Residence.</i> | <i>Names.</i>        | <i>Residence.</i>    |
|----------------------|-------------------|----------------------|----------------------|
| Cameron, Mary T.,    | Kingston, O       | Reynolds, Florence,  | Montreal             |
| Doull, Ethel M.,     | Montreal          | Ross, Elizabeth,     | Brucefield, O        |
| Galt, Annie P.,      | Montreal          | Rugg, M. Alice,      | Stanstead, Q         |
| Henderson, Grace,    | Montreal          | Smith, Annie Louise, | Montreal             |
| Hinds, Charlotte,    | Actonvale, Q      | Stephen, Jennie,     | Ottawa, O            |
| Holden, Margaret L., | St. John, N.B     | Walbridge, Mabel H., | Mystic, Q            |
| McBurney, Edith E.,  | St. Lambert, Q    | Young, Laura A.,     | Charlottetown, P.E.I |
| Pinder, Ethel B.,    | St. Lambert, Q    |                      |                      |

## FOURTH YEAR.

|                         |                     |                         |                      |
|-------------------------|---------------------|-------------------------|----------------------|
| Botterell, Florence A., | Montreal            | McCuaig, Mary,          | Montreal             |
| Brown, Justine M.,      | Montreal            | Macphail, Jeanette C.,  | Orwell, P.E.I        |
| Chalmers, Louise H.,    | Granby, Q           | Mitchell, Katharine R., | Montreal             |
| Denoon, Agnes H.,       | Montreal            | Nichols, Amy W.,        | Montreal             |
| Fraser, H. Alice,       | Richmond, Q         | Pitcher, Winona J.,     | Montreal             |
| Hammond, Elizabeth A.,  | Montreal            | St. James, Leah M.,     | Grande Ligne, Q      |
| Hurst, I. Ethel,        | Westmount, Montreal | Vaudry, M. Olive,       | Shefford Mountain, Q |
| Hutchinson, Margaret,   | St. Thomas, O       | Watson, Mona T.,        | Montreal             |
| Locke, Winifred A.,     | St. Lambert, Q      |                         |                      |

*Partial Students.*

## FIRST YEAR.

|                      |                            |                            |                     |
|----------------------|----------------------------|----------------------------|---------------------|
| Anderson, Alice G.,  | Ottawa, O                  | Mulholland, Minnie W.,     | Montreal            |
| Baynes, Helen,       | Montreal                   | Murray, Greta,             | Westmount, Montreal |
| Boyer, M. Juliet,    | Montreal                   | Mutchmor, Muriel B.,       | Ottawa, O           |
| Brodie, Margaret,    | St. Henry, Montreal        | Nowers, Win.,              | Montreal            |
| Browne, A. D. Hay,   | Montreal                   | Oswald, Bell,              | Montreal            |
| Buchanan, Alice A.,  | Montreal                   | Peverley, Evelyn L.,       | Westmount, Montreal |
| Burns, Margt. O.,    | Montreal                   | Redpath, Helen L.,         | Montreal            |
| Cassils, Edith M.,   | Montreal                   | Reford, Katie F.,          | Montreal            |
| Craig, Mabel,        | Montreal                   | Reinhardt, Emily M.,       | Montreal            |
| Edgar, Katie,        | Montreal                   | Reynolds, Elizabeth E. M., | Montreal            |
| Evans, Mary E.,      | Montreal                   | Robertson, J. Mildred,     | Montreal            |
| Gault, Lillian,      | Montreal                   | Robertson, May L.,         | Montreal            |
| Lundie, Jessie F.,   | Montreal                   | Ronald, Katie L.,          | Montreal            |
| McCombe, Lily,       | Montreal                   | Sawyer, F. M. (Mrs.),      | Montreal            |
| McLachlan, Win. E.,  | Montreal                   | Sharpe, Ellen,             | Agassiz, B.C        |
| McLeod, Lottie R.,   | Cote St. Antoine, Montreal | Smith, May,                | Montreal            |
| Macfarlane, Ida G.,  | Montreal                   | Tooke, Mabel L.,           | Montreal            |
| Mackay, Jeanie,      | Montreal                   | Walker, Marion O. E.,      | Montreal            |
| Mackay, Katharine,   | Montreal                   | White, Norah,              | Montreal            |
| Mudge, Katharine E., | Montreal                   |                            |                     |

## SECOND YEAR.

|                         |          |                           |          |
|-------------------------|----------|---------------------------|----------|
| Acton, Ev. M.,          | Montreal | (1) McLachlan, Win. E.    |          |
| Allen, Sarah,           | Montreal | Maltby, Emma,             | Montreal |
| Ames, L. Marion,        | Montreal | (1) Peverley, Evelyn I.   |          |
| (1) Baynes, Helen       |          | (1) Redpath, Helen L.     |          |
| Birks, Annie L.,        | Montreal | Redpath, Lucy M.,         | Montreal |
| (1) Brodie, Margt.      |          | Reekie, Bella, Westmount, | Montreal |
| (1) Cassils, Edith M.   |          | (1) Reinhardt, Emily M.   |          |
| Kelley, Jean L. (Mrs.), | Montreal | Sinclair, J. (Mrs.),      | Montreal |
| Krause, Louise B.,      | Montreal | (1) Tooke, Mabel L.       |          |
| Lamb, Maud,             | Montreal | Walker, Florence B.,      | Montreal |
| MacCallum, Victoria,    | Montreal | (1) Walker, Marion O. E.  |          |
| (1) McCombe, Lily       |          |                           |          |

## THIRD YEAR.

|                          |          |                     |  |
|--------------------------|----------|---------------------|--|
| (1) Browne, A. D. Hay    |          | Raynes, Mary T. V., |  |
| Johnson, Sybil,          | Montreal | Westmount, Montreal |  |
| (2) Kelley, J. L. (Mrs.) |          | Raynes, Norah B.,   |  |
|                          |          | Westmount, Montreal |  |

## FOURTH YEAR.

|                            |              |                         |  |
|----------------------------|--------------|-------------------------|--|
| (2) Acton, Ev. M.          |              | (2) Lamb, Maud          |  |
| (2) Birks, Annie L.        |              | (1) Mackay, Jeanie      |  |
| Campbell, Katherine,       | Montreal     | (1) Mudge, Katharine E. |  |
| Gibb, Elinor R.,           |              | Murray (Mrs. J. C.),    |  |
| Cote St. Antoine, Montreal |              | Westmount, Montreal     |  |
| Gibb, M. B. R.,            |              | Rodden, Veronica,       |  |
| Cote St. Antoine, Montreal |              | Westmount, Montreal     |  |
| Holden, Ruby A.,           | Montreal     | Walker, Jennie G.,      |  |
| L'Abbé, Jean A.,           | Beaconsfield | Westmount, Montreal     |  |



## B. A.

|                        |                  |                       |               |
|------------------------|------------------|-----------------------|---------------|
| Angus, Frances R.,     | Montreal         | Lyman, Katherine T.,  | Montreal      |
| Armstrong, Ethel,      | Montreal         | Macdonald, Minnie L., | Montreal      |
| Botterell, H. Inez R., | Montreal         | Ogilvy, Isabella,     | Montreal      |
| Botterell, Jeannie T., | Montreal         | Raynes, Ethel G.,     | Montreal      |
| Brown, Jessie,         | Montreal         | Reid, Helen R. Y.,    | Montreal      |
| Craig, Margaret,       | Montreal         | Shaw, S. Louise,      | Montreal      |
| Davidson, Clara F. M., | Frelighsburg, Q. | Travis, Katherine,    | Hampton, N.B. |
| Evans, Blanche B.,     | Montreal         | Wilson, Margaret,     | Montreal      |
| Leach, Milda,          | Montreal         |                       |               |

## M. A.

Binmore, Elizabeth,

Montreal

## FACULTY OF APPLIED SCIENCE.

## FIRST YEAR.

|                             |                          |                           |                          |
|-----------------------------|--------------------------|---------------------------|--------------------------|
| Austin, Claude V. C.,       | Ottawa, O                | *McKenzie, Bertram S.,    | London, O.               |
| *Baby, Charles L.,          | Montreal                 | McLaren, Archibald J.,    | Montreal                 |
| Blaylock, Selwyn G.,        | Danville, Q              | McLean, William B.,       | Pictou, N.S.             |
| Bowman, Archibald A.,       | New Glasgow, N.S.        | McLeod, Norman M.,        | Montreal                 |
| *Bulmer, Horatio E. P.,     | Montreal                 | McMaster, Arthur W.,      | Montreal                 |
| Burgess, R. Earl,           | Wolfville, N.S.          | McMillan, George P.,      | Petrolia, O              |
| Campbell, Francis W.,       | Montreal                 | Millar, James L.,         | Pembroke, O              |
| Campbell, Norman M.,        | Montreal                 | Moore, Ernest V.,         | Peterboro, O             |
| Colpitts, Walter W.,        | Moncton, N.B.            | Moore, William A.,        | Toronto, O               |
| Cornwall, Clement A. K.,    | Ashcroft, B.C.           | Morgan, Charles B.,       | Hamilton, O              |
| Corriveau, Raoul de B.,     | Iberville, Q             | Nicholls, Henry G.,       | Toronto, O               |
| Coussirat, Henri A.,        | Montreal                 | Parizeau, Henri D.,       | Boucherville, Q          |
| *Cox, Alvin J.,             | Shelburne, N.S.          | Parks, Arthur H.,         | St. John, N.B.           |
| Dargavel, James S.,         | Elgin, O                 | *Paterson, Charles S.,    | Montreal                 |
| Davidson, William A.,       | Peterboro, O             | Peden, Frank,             | Montreal                 |
| Denis, Leopold,             | Montreal                 | Pender, William D.,       | Toronto, O               |
| Donnelly, Austin J.,        | Montreal                 | Percy, Howard M.,         | Montreal                 |
| Fetherstonhaugh, Edward P., | Montreal                 | *Pergau, Harry,           | Lyn, O                   |
| Fraser, Charles E.,         | Montreal                 | Porcheron, Alphonse,      | Montreal                 |
| Fraser, Harold,             | Brockville, O            | Preston, John,            | Toronto, O               |
| Fraser, James W.,           | Bridgeville, N.S.        | Ramsay, William A.,       | Montreal                 |
| Gagnon, Louis F.,           | Montreal                 | *Redpath, J. Herbert,     | Montreal                 |
| Gough, Richard T.,          | Halifax, N.S.            | Rogers, Reginald H.,      | Alberton, P.E.I.         |
| Grier, Arthur G.,           | Montreal                 | Shaw, John A.,            | Montreal                 |
| *Haddo, Lord, Haddo House,  | Scotland                 | Sise, Edward F.,          | Montreal                 |
| Hatchette, Joseph C.,       | Montreal                 | *Smith, Donald A.,        | Montreal                 |
| Henderson, Richard A.,      | Chilliwack, B.C.         | Stevens, Angus P.,        | Dunham, Q                |
| Hickey, John V.,            | Montreal                 | St. George, Harry L.,     | Montreal                 |
| *Howell, Archibald R.,      | Montreal                 | Strathy, Edward J. V. C., | Lachine, Q               |
| Hunt, George A.,            | Galetta, O               | *Sharpe, G. P.,           | British Columbia         |
| *Huot, Dumont,              | Montreal                 | Thomson, Leslie C.,       | Montreal                 |
| Hutchinson, William C.,     | Montreal                 | *Van Horne, Richard B.,   | Montreal                 |
| Hyde, George T.,            | Montreal                 | Waller, George W.,        | Bartonville, O           |
| Hyde, James C.,             | Montreal                 | Wenger, Edgar I.,         | Ayton, O                 |
| Ingraham, Bruce A.,         | Sydney, N.S.             | *Whiteway, William V. E., | St. John's, Newfoundland |
| Kane, Roderick A. C.,       | Montreal                 | Whyte, John S.,           | Osgood, O                |
| Kirkpatrick, Stafford F.,   | Kingston, O              | Wilkins, George H.,       | Montreal                 |
| *Mathers, William R.,       | St. John, N.B.           | Willard, Edward G.,       | Hamilton, O              |
| *McIntosh, Donald S.,       | B.A., Pleasant Bay, N.S. | Wilson, Robert M.,        | Montreal                 |
|                             |                          | Young, William M.,        | Renfrew, O               |
|                             |                          | Yuile, Norman M.,         | Montreal                 |



## SECOND YEAR.

|                         |                             |                        |                           |
|-------------------------|-----------------------------|------------------------|---------------------------|
| Archibald, Harry P.,    | Antigonish, N.S.            | Laurie, Albert,        | Montreal                  |
| Ainley, Charles M.,     | Almonte, O                  | MacKerras, John D.,    | Kingston, O               |
| Atkinson, Donald C. T., | Etchemin, Q                 | MacLean, Thomas A.,    | Charlottetown, P.E.I.     |
| Atkinson, William J.,   | Glenboro, Man.              | MacLennan, Frank W.,   | Cornwall, O               |
| Bachand, George,        | Montreal                    | Macphail, William M.,  | Orwell, P.E.I.            |
| Bacon, Frederick T. H., | Montreal                    | Matheson, Ernest H.,   | Oyster Bed Bridge, P.E.I. |
| Bell, Richard A. S.,    | Mosgrove, O                 | McCarthy, George A.,   | Moncton, N.B.             |
| Benny, Walter W.,       | D'Aillebout, Q              | McLea, Ernest H.,      | Montreal                  |
| Bond, Frank L. C.,      | Montreal                    | McRae, John B.,        | Ottawa, O                 |
| Butler, Percy,          | Montreal                    | Mitchell, Norman C.,   | Halifax, N.S.             |
| Cape, Edmond,           | Hamilton, O                 | Mitchell, Norman S.,   | Montreal                  |
| Colson, Charles H.,     | Montreal                    | Patton, W. H.,         | Huntingdon, Q             |
| Davidson, J. Herbert,   | Montreal                    | Reaves, Campbell,      | Montreal                  |
| Davis, Angus W.,        | Montreal                    | Scott, James H.,       | Outremont, Q              |
| Dean, Bertram D.,       | Hamilton, O                 | Sheffield, Charles,    | Kingston, O               |
| Eaves, Edmund,          | Montreal                    | Summa, Vito M.,        | Arigiano, Italy           |
| Ewan, Herbert M.,       | Montreal                    | Thomas, Leonard E. L., | Melbourne, Q              |
| Garrett, George W. S.,  | Ottawa, O                   | Waterous, Charles A.,  | Brantford, O              |
| Gisborne, Lionel L.,    | Ottawa, O                   | Wilkinson, Charles T., | Brockville, O             |
| Hillary, George M.,     | Whitby, O                   | Young, George A.,      | Kingston, O               |
| Irving, Thomas T.,      | Vernon River Bridge, P.E.I. |                        |                           |
| Kennedy, Lindsay R.,    | Pembroke, O                 |                        |                           |

## THIRD YEAR.

|                          |                     |                         |                       |
|--------------------------|---------------------|-------------------------|-----------------------|
| Balfour, Reginald H.,    | Montreal            | MacKinnon, George D.,   | Charlottetown, P.E.I. |
| Beatty, David H.,        | Sarnia, O           | Macleod, George R.,     | Uigg, P.E.I.          |
| Bell, John W.,           | Montreal            | McKibbin, Fred. W. J.,  | Peterboro, O          |
| Blair, David E.,         | Chicoutimi, Q       | McLaren, Duncan T.,     | Montreal              |
| Bovey, Edward P.,        | Torquay, Devon, Eng | Newcombe, Avarad B.,    | Lakeville, N.S.       |
| Burnham, Harold B.,      | Peterboro, O        | Packard, Frank L.,      | Montreal              |
| Campbell, Alexander,     | Ottawa, O           | Paradis, Paul,          | St. Johns, Q          |
| Chamberlain, William T., | Halifax, N.S.       | Pitcher, Norman C.,     | Montreal              |
| Connal, William F.,      | Peterboro, O        | Ross, John K.,          | Montreal              |
| Davidson, Shirley,       | Montreal            | Sise, Charles F.,       | Montreal              |
| Dougall, Ralph,          | Montreal            | Simpson, J. Manly,      | Stratford, O          |
| Drinkwater, Charles G.,  | Montreal            | Stovel, Russell W.,     | Toronto, O            |
| Drysdale, George A.,     | Boston, Mass., U.S. | Suter, Robert W.,       | Carleton Place, O     |
| Edward, John R.,         | Outremont, Q        | Symmes, Howard C.,      | Aylmer, Q             |
| Ferguson, Thomas,        | Peterboro, O        | Thompson, Frederick W., | Coaticook, Q          |
| Finnie, Oswald S.,       | Ottawa, O           | Thomson, Clarence,      | Montreal              |
| *Hall, John H.,          | Peterboro, O        | Thomson, Henry N.,      | Quebec, Q             |
| Haycock, Richard L.,     | Ottawa, O           | Travis, Berton C.,      | Hampton, N.B.         |
| Macbean, Stanley L.,     | Montreal            | Turnbull, John M.,      | Montreal              |
| Macdonald, James E.,     | New Glasgow, N.S.   | Walters, Morley,        | Hull, Q               |
| Macdonald, Peter W.,     | West Bay, N.S.      | White, Frank H.,        | Montreal              |
| Mackie, James D.,        | Kingston Station, O | Yorston, Louis,         | Pictou, N.S.          |

## FOURTH YEAR.

|                       |                       |                         |                     |
|-----------------------|-----------------------|-------------------------|---------------------|
| Bayfield, Henry A.,   | Charlottetown, P.E.I. | Denis, Theophile,       | Montreal            |
| *Bruce, R. Randolph,  | Montreal              | Dufresne, Alexander R., | Ottawa, O           |
| Chase, Harry A.,      | Kentville, N.S.       | Gill, James L. W.,      | Little York, P.E.I. |
| Clarke, Ernest R.,    | Stratford, O          | Green, Joseph S. R.,    | Montreal            |
| Courtice, Francis E., | Port Perry, O         | Hare, George G.,        | St. John, N.B.      |
|                       |                       | Huestis, Harry E.,      | Halifax, N.S.       |

|                             |               |                           |             |
|-----------------------------|---------------|---------------------------|-------------|
| Hunter, John W.,            | Kingston, O   | Rutherford, Forest,       | Montreal    |
| Jaquays, Homer M., B.A.,    | Montreal      | Rutherford, Gordon Scott, | Montreal    |
| Johnson, William S.,        | Clapham, Q    | Rutherford, Stewart F.,   | Montreal    |
| Kenny, Thomas F.,           | Ottawa, O     | Smail, Albert E.,         | Montreal    |
| Killaly, Hamilton M., B.A., | Morrisburg, O | Stewart, Robert H.,       | Montreal    |
| McCallum, Arthur,           | Maxwell, O    | Trenholme, Henry R.,      | Montreal    |
| McDougall, William,         | Ormsdown, O   | Walkem, George A.,        | Kingston, O |
| Mussen, Horace W.,          | Aurora, Q     | Webb, William M.,         | Petrolia, O |
| Reinhardt, Carl,            | Montreal      | Wright, Charles H.,       | Renfrew, O  |

## GRADUATES.

|                                  |          |                           |                       |
|----------------------------------|----------|---------------------------|-----------------------|
| Angus, William F., B.A.Sc.,      | Montreal | Currie, William, B.A.Sc., | Montreal              |
| Askwith, Wm. R., B.A.Sc.,        | Montreal | Farmer, John T.,          | Liverpool, Eng.       |
| Barnes, Howard T., B.A.Sc.,      | Montreal | King, Robert O., B.A.Sc., | Toronto, O            |
| Cunningham, William N., B.A.Sc., | Montreal | Mellanby, Alexander L.,   | West Hartlepool, Eng. |

FACULTY OF COMPARATIVE MEDICINE AND  
VETERINARY SCIENCE.

## FIRST YEAR.

|                 |                   |                 |
|-----------------|-------------------|-----------------|
| Bell, W. L.     | Fahey, J.,        | Pfersick, J. G. |
| Burke, R. H.,   | Henderson, C. M., | Spanton, J. P.  |
| Cleaves, A. H., | Lambert, G. H.,   | Symes, J. W.,   |
| Cook, —         | Paquin, L. A.,    | Wallis, W. B.,  |

## SECOND YEAR.

|                  |                   |                   |                     |
|------------------|-------------------|-------------------|---------------------|
| Bruneau, A. E.,  | Montreal          | Killam, B. B.,    | Rockville, N.S.     |
| Burns, W.,       | Duluth, Minn.     | Matthew, R. G.,   | Sawyer, Q.          |
| Connelly, T.,    | Troy, N.Y.        | Moore, J. C.,     | St. Chrysostome, Q. |
| Cullen, D. P.,   | Swampscott, Mass. | Stevenson, G. T., | South Granby        |
| Fraser, A. D.,   |                   | Thayer, W. L.,    | Greenfield, Mass.   |
| Hilliard, W. A., | Minnedosa, Man.   |                   |                     |

## THIRD YEAR.

|                 |                  |                   |             |
|-----------------|------------------|-------------------|-------------|
| Baldwin, B. K., | Philadelphia     | McCarry, J. J.,   | Montreal    |
| Craik, J. E.,   | Allan's Corners  | Morris, E. H.,    | Mexico, Mo. |
| Dell, H. H.,    | London, O.       | Ness, J. A.,      | Howick, Q.  |
| Greer, J.,      | Ormsdown, Q.     | Patterson, J. H., | Montreal    |
| Higgins, C. H., | Dover, Mass.     | Richards, S. C.,  | Wales       |
| Kee, F. W.,     | Ormsdown, Q.     | Thurston, E. C.,  | Montreal    |
| Macnider, S.,   | Little Metis, Q. |                   |             |

## COLLEGES AFFILIATED IN ARTS.

## MORRIN COLLEGE, QUEBEC.

*Undergraduates.*

## FIRST YEAR.

|                      |            |                       |               |
|----------------------|------------|-----------------------|---------------|
| Brown, Edmond Locke, | Quebec     | Lee, Gertrude A.,     | Quebec        |
| Jackson, Emma M.,    | Quebec     | Pocock, Chas. Ed. A., | Hillhurst, Q. |
| Johnston, Alfred,    | Leeds, Q.  | Seifert, Fred. Wm.,   | Quebec        |
| Laverie, James H.,   | Lauson, Q. | Wheeler, James,       | Runnymede, Q. |

## SECOND YEAR.

|                                      |        |                    |          |
|--------------------------------------|--------|--------------------|----------|
| Meiklejohn, Harriet T.,              | Quebec | Seifert, Ethel M., | Quebec   |
| Pidgeon, E. Leslie, New Richmond, Q. | Quebec | Stuart, James A.,  | Montreal |
| Reid, Andrew D.,                     | Quebec |                    |          |

*Partial Students.*

|                                      |        |                 |        |
|--------------------------------------|--------|-----------------|--------|
| Hunter, Helen,                       | Quebec | Webster, Maude, | Quebec |
| Tanner, Wm. Pat., Brompton Falls, Q. | Quebec | Woods, Oram     | Quebec |
| Walters, Albert Ernest,              | Quebec |                 |        |

## ST. FRANCIS COLLEGE. RICHMOND.

*Undergraduates.*

|                    |                   |                     |               |
|--------------------|-------------------|---------------------|---------------|
| Cairnie, Lorne D., | Melbourne, Q.     | Pennoyer, Chas. H., | Waterville, Q |
| Crack, Isaac E.,   | Kingsbury, Q.     | Rivard, Alfred E.,  | Ware, Mass    |
| Lyster, Ashley,    | Richmond, Q.      | Wilkins, Henrietta, | Melbourne, Q  |
| McMichael, Robert, | Windsor Mills, Q. |                     |               |

## STANSTEAD WESLEYAN COLLEGE.

*Undergraduates.*

|                    |             |                   |           |
|--------------------|-------------|-------------------|-----------|
| Hovey, Earle F.,   | Way's Mills | McDuffee, Hattie, | Stanstead |
| Howden, Jeanie C., | Montreal    | Rugg, Fred.,      | Stanstead |
| Jones, Samuel,     | Stanstead   |                   |           |

## SUMMARY.

|                                                                   |       |
|-------------------------------------------------------------------|-------|
| Students in Law, McGill College.....                              | 43    |
| " in Medicine, ".....                                             | 412   |
| " in Arts:— ".....                                                |       |
| Men { Graduates.....                                              | 3 {   |
| Undergraduates.....                                               | 145 { |
| Partial.....                                                      | 102 { |
|                                                                   | 18 {  |
| Women { Graduates.....                                            | 63 {  |
| Undergraduates.....                                               | 64 {  |
| Partial.....                                                      |       |
| Total in Arts including Students from other Faculties, about 650. |       |
| Students in Arts, Morrin College.....                             | 18    |
| " " " St. Francis College.....                                    | 7     |
| " " " Stanstead Wesleyan College.....                             | 5     |
| " " Applied Science, McGill College:— ..                          |       |
| { Undergraduates, .....                                           | 205   |
| { Partial and Graduates } .....                                   |       |
| " " Veterinary Science.....                                       | 41    |
|                                                                   | 1126  |
| McGill Normal School, Teachers-in-training.....                   | 168   |
|                                                                   | 1294  |
| Deduct, repeated in different lists.....                          | 27    |
| Total.....                                                        | 1267  |

# Observatory.

Latitude, N.  $45^{\circ} 30' 17''$ . Longitude,  $4^{\text{h}} 54^{\text{m}} 18^{\text{s}} 65$ .

Height above sea level 187 ft.

*Superintendent*—C. H. McLEOD, MA.E.

*Assistants*— } THEO. DENIS, B.A.Sc.  
                  } GEORGE McLEOD.

*Meteorological Observations* are made every fourth hour, beginning  $3^{\text{h}}$  00<sup>m</sup> Eastern standard time; also at  $8^{\text{h}}$  00<sup>m</sup> and  $20^{\text{h}}$  00<sup>m</sup>. Independent bi-hourly temperature observations are also made. The principal instruments employed are the following:—Two standard mercurial barometers; one Kew standard thermometer; two Pastorelli thermometers; one maximum thermometer; one minimum thermometer; one set of six self recording thermometers, with controlling clock, battery, etc.; two anemometers; one wind vane (wind-mill pattern); one anemograph, with battery, etc.; one sunshine recorder; one rain-band spectroscope; and one rain gauge.

The Anemometer and Vane are on the summit of Mount Royal, at a point about three-quarters of a mile northwest of the Observatory. They are 57 feet above the surface of the ground and 810 feet above sea level.

Soil temperatures are observed, in co-operation with the Physical Laboratory, by means of platinum thermometers at depths ranging from one inch to nine feet.

*The Astronomical Equipment* consists of:—The Blackman Telescope ( $6\frac{1}{4}$  in.); a photoheliograph ( $4\frac{1}{2}$  in.); a  $3\frac{1}{4}$  in. transit, with striding level, etc.; a prismatic (8 c. m.) transit instrument also arranged as a zenith telescope, a 2 in. transit in the prime vertical; two collimating telescopes; one sidereal clock; one meantime clock; one sidereal chronometer; one meantime chronometer; one chronograph; batteries, telegraph lines and sundry minor instruments.

Observations for clock errors are made on nearly every clear night. Time exchanges are regularly made with the Toronto Observatory. Time signals are distributed throughout the city by means of the noon time-ball, continuous clock signals, and the fire alarm bells; and to the country, through the telegraph lines.

Observations of sun spots, for position and area, are made with the Blackman telescope and the photoheliograph.

The longitude of the Observatory was determined in 1892 by direct telegraphic connection with Greenwich and with exchange of observers and instruments. The position is believed to be the most accurately determined in America.

Courses of instruction are given in the use of the meteorological instruments see page 23, and in astronomical work to the Fourth Year Students in the Civil Engineering Courses, see page 87.

# University Gymnasium.

*Medical Examiner and Instructor.*—R. TAIT MCKENZIE, B.A., M.D.

The classes, which are open to Students of all the Faculties, will meet at the University Gymnasium, at hours to suit, as far as possible, the convenience of Students, and which will be announced at the commencement of the Session.

The recent addition of some special apparatus enables the instructor to devote some attention to the application of exercise in treating special cases of weakness or deformity, which it is requested shall be reported to him before the regular class work is undertaken.

THE WICKSTEED SILVER AND BRONZE MEDALS FOR PHYSICAL CULTURE (the gift of Dr. R. J. Wicksteed) are offered for competition to Students of the graduating class and to Students who have had instruction in the Gymnasium for two sessions : the silver medal to the former, the bronze medal to the latter.

The award of these medals is made by Judges, appointed by the Corporation of the University.

Every competitor for the silver medal is required to lodge with the Judges, before the examination, a certificate of good standing in the graduating class signed by the Dean or Secretary of the Faculty to which he belongs, and the medal will not be awarded to any Student who may fail in his examination for the degree.

Classes for the Students of the DONALDA SPECIAL COURSE FOR WOMEN will be conducted by MISS BARNJUM at hours found most suitable.

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## REGULATIONS

CONCERNING THE MANAGEMENT OF

### THE COLLEGE GROUNDS AND ATHLETICS.

All matters relating to the management of the College grounds and of Outdoor Athletics and Sports are under the control of a Committee consisting of:

- One Governor.
- The Principal.
- One Member of the Faculty of Arts.
- One Member of the Faculty of Applied Science.
- One Member of the Faculty of Law.
- One Member of the Faculty of Medicine.
- One Member of the Faculty of Comp. Medicine.
- One Graduate.



- One Undergraduate, member of the Football Club.
- One Undergraduate, member of the Tennis Clubs.
- One Undergraduate, member of the Cricket Club.
- One Undergraduate, member of the Hockey Club.
- The President of the Athletic Association.

The several Members of the Committee are elected annually by their respective bodies; and the Committee meets for organization on the first Saturday of February in each year. The Undergraduate Members of the Committee are entitled to vote only on matters relating to Athletics.

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The following extracts are made from the rules and regulations of the Committee, for the guidance of Members of the University and the several Athletic Clubs and Associations which are from time to time permitted to use the grounds :

The University and McTavish Street gates shall be closed between 6 p.m. and 7 a.m. on week days and the whole day on Sunday.

The Shebrooke Street gates shall be closed between 10 p.m. and 6 a.m.

Such persons as are entitled to use the Grounds shall be provided with tickets renewable each year.

Those entitled to tickets are the Members of the University and prominent Benefactors, and the families of Governors and Professors.

The several Clubs shall be permitted to issue special tickets (without charge), entitling the holders to admission to the Grounds for the purpose of viewing matches, or for other special occasions of public interest.

All Students desirous of taking part in football matches, or otherwise engaging in violent athletic contests, must pass a medical examination, to be held under the direction of the Superintendent of the Gymnasium. A complete record of all such examinations shall be kept by the Superintendent or other officer appointed to this duty.

All Clubs must submit their Regulations, Rules and By-Laws, and any changes in the same, for the approval of the Committee. They must make application for the use of such portions of the Grounds as they require and for any special privileges.

The Athletic Association must submit its programme for each year for the approval of the Committee.

All Undergraduates of the University are required to pay a fee of two dollars (\$2.00) for the use of the Grounds. The amount so paid is handed over to the Committee, and is by it expended in the interest of College Athletics and in the permanent improvement of the Grounds.

# University Societies.

## MCGILL STUDENTS' CLUB.

The house No. 73 McGill College Avenue is now open as a Students' club, under the management of a Committee consisting of members of the University. Board can be obtained at the rate of \$12.50 a month or \$3.00 a week. A limited number of rooms are available for residence. For further information apply to Professor D. P. Penhallow, Secretary of Committee.

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## UNIVERSITY LITERARY SOCIETY.

ESTABLISHED 1869.

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## GRADUATES' SOCIETY OF MCGILL UNIVERSITY.

INCORPORATED 24TH JULY, 1880.

Officers 1896-97.

*President*—Frederick G. Finley, M.B. (London), M.R.C.S.

*Vice-Presidents*—Miss Carrie M. Derick, M.A.; Miss H. Inez R. Botterell, B.A.; Prof. Frank D. Adams, Ph.D. (Heidelberg).

*Secretary*—H. V. Truell, B.A., B.C.L., 185 St. James St., Montreal.

*Treasurer*—Francis Topp, B.A., B.C.L.

*Resident Councillors*—Malcolm C. Baker, D.V.S.; Frederick W. Hibbard, M.A., B.C.L.; David J. Evans, M.D.; H. B. Carmichael, M.D.; A. B. Holden, B.A., B.A.Sc.; Archibald McArthur, B.A.

*Non-Resident Councillors*—Hon. Justice Lynch, Knowlton, Q.; Rev. Edward H. Krans, M.A., LL.D., New York; A. H. U. Colquhoun, B.A., Toronto, O.; Sir James Grant, M.D., Ottawa, O.; W. J. McGuigan, M.D., Vancouver, B.C.; J. H. Scammell, M.D., St. John, N.B.

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## OTTAWA VALLEY GRADUATES' SOCIETY.

ORGANIZED 1890.

*Honorary President*—Henry P. Wright, M.D., C.M., M. and L.R.C.P., etc.

*President*—Robert Cassels, B.A., Q.C.

*1st Vice-President*—Robert H. Conroy, B.C.L. (Aylmer).

*2nd Vice-President*—S. P. Cooke, M.D., C.M.

*3rd Vice-President*—W. F. Ferrier, B.A.Sc., F.G.S.

*Treasurer*—R. W. Ells, M.A., LL.D., (Geol. Survey office, Ottawa).

*Secretary*—Alfred E. Barlow, M.A. (Geol. Survey).

*Committee*—G. H. Groves, M.D., C.M. (Carp, Ont.); Henry M. Ami, M.A., F.G.S.; Wm. C. Cousens, M.D., C.M.; C. J. H. Chipman, B.A., M.D., C.M.; Robert Bell, B.A.Sc., M.D., C.M., LL.D. (Queen's).

## APPLIED SCIENCE GRADUATES' SOCIETY.

ORGANIZED 1895.

*Hon. President*—Dr. H. T. Bovey.

*President*—Prof. C. H. McLeod.

*Vice-President*—M. L. Hersey.

*Sec.-Treasurer*—C. B. Smith, Ma.E., Assistant-Professor.

*Resident Committee*—D. Ogilvy, H. Herdt, W. A. Duff, S. F. Rutherford, II. T. Barnes.

*Non-Resident Committee*—W. Chipman, Toronto ; Dr. R. Bell, Ottawa ; St. G. Boswell, Quebec ; J. H. Scammel, St. John, N.B. ; P. L. Naismith, Glace Bay, N.S. ; W. J. Bulman, Charlottetown, P.E.I. ; D. A. Stewart, Winnipeg ; W. A. Carlyle, Victoria, B.C. ; E. P. Mathewson, Pueblo, Col. ; J. P. Ball, Lemont, Ill. ; R. A. Gunn, New York ; A. E. Childs, Boston.

## NEW YORK GRADUATES' SOCIETY OF MCGILL UNIVERSITY.

ORGANIZED 1895.

*President*—Rev. Edward H. Krans, M.A., LL.D.

*Vice-Presidents*—Wolfréd D. E. Nelson, M.D. ; James A. Meek, M.D. ; Wm. de Courcy Harnett, B.C.L.

*Secretary*—W. Ferguson, M.D., 1131 Linton Ave, New York.

*Treasurer*—Hiram N. Vineberg, M.D.

*Committee*—Geo. C. Becket, M.D. ; Rev. Charles Bancroft, M.A. ; James A. Stevenson, B.A.Sc.

## MCGILL GRADUATES' SOCIETY OF TORONTO.

ORGANIZED 1896.

*Hon. President*—E. A. Meredith, LL.D.

*President*—J. J. MacLaren, Q.C., LL.D.

*1st Vice-President*—H. A. Burritt, M.D.

*2nd Vice-President*—A. R. Lewis, B.A., Q.C.

*Secretary*—R. B. Henderson, B.A., 24 Adelaide street East.

*Treasurer*—A. H. U. Colquhoun, B.A.

*Executive Committee*—J. Algernon Temple, M.D. ; C. Swabey, B.A. ; P. E. Ritchie, B.A. ; Rev. Canon Sweeney, D.D. ; George Pringle, M.D. ; Frank Pedley, B.A.

## THE BRITISH COLUMBIAN SOCIETY OF GRADUATES OF McGILL UNIVERSITY.

ORGANIZED 1896.

*Hon. President*—J. W. Powell, M.D., C.M., (Victoria).

*President*—S. J. Tunstall, B.A., M.D., C.M., (Vancouver).

*Vice-Presidents*—E. B. C. Hannington, M.D., C.M. (Victoria); Arthur E. Hill, B.A.Sc. (New Westminster); Walter Hunter, B.A., B.C.L. (Nanaimo); Rev. J. H. McVicar, B.A. (Nelson).

*Secretary*—W. J. McGuigan, M.D., C.M. (Vancouver).

*Treasurer*—Wm. A. DeWolff Smith, M.D., C.M. (New Westminster).

*Executive Committee*—R. S. B. O'Brien, M.D., C.M. (Nanaimo); Rev. H. E. C. Mason, B.A. (Vancouver); W. A. Carlyle, M.A. (Victoria); A. M. Robertson, M.D., C.M. (Vancouver); G. W. Boggs, M.D., C.M. (New Westminster), and the officers of the Society ex-officio.

## McGILL GRADUATES' SOCIETY OF NEW BRUNSWICK.

ORGANIZED 1896.

*President*—G. M. Duncan, M.D.

*1st Vice-President*—W. W. White, B.A., M.D.

*2nd Vice-President*—F. J. White, M.D., L.R.C.P. (London).

*3rd Vice-President*—W. C. Crockett, M.D.

*Treasurer*—F. L. Kenney, B.A. (Univ. N.B.), M.D.

*Secretary*—J. H. Scammell, M.D., 76 Waterloo Street, St. John, N.B.

## NOVA SCOTIA SOCIETY OF McGILL GRADUATES.

ORGANIZED 1896.

*President pro tem.*—Rev. R. Laing, M.A., Pres. Halifax Ladies' College.

*Secretary pro tem.*—W. H. Hattie, M.D., 11 Spring Garden Road, Halifax.

## UNDERGRADUATES' LITERARY SOCIETY.

CONSTITUTED 1880.

OFFICERS FOR 1895-6.

*President*—V. E. Mitchell, Law, '96.

*1st Vice-President*—J. S. R. Green, App. Sc., '96.

*2nd Vice-President*—Wm. S. Ferguson, Arts, '96.

*Secretary*—John J. Willis, Arts, '97.

*Treasurer*—S. G. Archibald, Arts, '97.

*Committee*—J. T. Scrimger, Arts, '96; A. R. McMaster, Arts, '97; John G. Saxe, Arts, '97; E. E. Howard, B.A., Law, '98; A. H. Duff, Arts, '98.

## DELTA SIGMA SOCIETY.

ESTABLISHED 1884.

OFFICERS FOR 1895-96.

*President*—Agnes H. Denoon.

*Vice-President*—Marjorie Holden.

*Sec.-Treasurer*—Harriet Brooks.

*Assistant-Secretary*—Kathleen Finley.

*Committee*.—Misses Botterell, Codd and Armstrong.

## MCGILL COLLEGE YOUNG MEN'S CHRISTIAN ASSOCIATION.

OBJECT.—To promote the piety of its members and the cause of Christianity in the University.

MEMBERSHIP.—The active Membership of the Association shall consist of Graduates and Students of the University who are members of some Protestant church. Any Graduate and Student of good moral character may become an associate member. A social reception is given to new students at the beginning of the session.

OFFICERS FOR 1896.

*Hon. President*—Sir Wm. Dawson.

*President*—E. M. Campbell, Arts, '97.

*1st Vice-President*—H. P. Archibald, App. Sc., '98.

*2nd Vice-President*—C. Ogilvy, B.A., Med., '98.

*Rec.-Secretary*—R. H. Rogers, B.A., Law, '98, App. Sc. '99.

*Treasurer*—R. C. Paterson, Arts, '98.

*Asst.-Treasurer*—A. H. Gordon, Med., '99.

*Representative from Comparative Medicine*—R. G. Mathew, '97.

*General Secretary*—N. D. Keith, B.A., 844 Sherbrooke St.

### CHAIRMEN OF COMMITTEES.

*Religious Meeting*—H. P. Stockwell, Med., '98.

*Bible Study*—A. R. Ross, Arts, '97.

*Social*—Chas. Ogilvy, B.A., Med., '98.

*Membership*—M. C. Heine, Arts, '98.

*Musical*—H. N. Thomson, App. Sc., '97.

*Missionary*—A. H. Grace, Arts, '98.

*Finance*—R. C. Paterson, Arts, '98.

*Hand-book*—N. D. Keith, B.A., Gen. Sec'y.

*Building*—E. M. Campbell, Arts, '97.

*Graduate*—W. F. Hamilton, M.D.



## YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

ESTABLISHED 1887 (AS THEODORA SOCIETY).

**OBJECT.**—The development of Christian character in the members, and the development of active Christian work particularly among the young women of the University. Open for membership to students of the Donalds Special Course for Women.

SESSION 1896-97.

*President*—Elizabeth Ross.

*Vice-President*—A. Louise Shaw.

*Cor.-Secretary*—Edith E. McBurney.

*Rec.-Secretary*—Catherine Armstrong.

*Treasurer*—Christina King.

CONVENERS OF COMMITTEES.

*Devotional*—A. Louise Shaw.

*Theodora*—Grace Henderson.

*Membership*—A. Louise Smith.

*Relief*—Jennie Stephen.

## McGILL COLLEGE CLASSICAL CLUB.

For the purpose of fostering a greater interest in and promoting the further study of Classical Languages, Literature and Art.

OFFICERS FOR 1895-6.

*Hon. President*—A. J. Eaton, M.A., Ph.D. (Leipsic).

*President*—W. S. Ferguson, '96.

*1st Vice-President*—J. G. Saxe, '97.

*2nd Vice-President*—Campbell P. Howard, '97.

*Secretary*—D. W. Munn, '98.

*Treasurer*—R. H. Ker, '97.

*Reporter*—T. R. Macmillan, '97.

*Executive Committee*—E. E. Howard, B.A., Law, '98; J. T. Scrimger, '96; M. C. Heine, '98.

## McGILL UNIVERSITY ATHLETIC ASSOCIATION.

ESTABLISHED 1884.

OFFICERS FOR 1896-97.

*Hon. President*—Principal Peterson.

*Hon. Treasurer*—R. F. Ruttan, B.A., M.D.

*President*—N. Grace, Med., '98.

*Vice-President*—E. H. McLea, App. Sc., '98.

*Secretary*—F. W. MacLennan, App. Sc., '98.

*Treasurer*—W. Lynch, Med., '98.

## McGILL UNIVERSITY RUGBY CLUB.

*Hon. President*—Principal Peterson.

*Hon. Treasurer*—N. D. Gunn, M.D.

*President*—L. E. W. Irving, Med., '98.

*Vice-President*—Chas. Graham Drinkwater, App. Sc., '97.

*Hon. Secretary*—Campbell P. Howard, Arts, '97.

*Treasurer*—N. Grace, Med., '98.

*Captain 1st XV*—H. J. Schwartz, Med., '98.

*Captain 2nd XV*—Shirley Davidson, App. Sc., '97.

*Captain 3rd XV*—H. T. Burton, Arts, '99.

*Committee*—Faculty of Law: Geo. H. Montgomery, '97; C. J. Hickson, '98. Faculty of Medicine: D. A. Whitton, '98; Jos. Leveque, '99. Faculty of Arts: A. R. McMaster, '97; W. W. Skinner, '99. Faculty of App. Sc., Ernest McLea, '98; Wm. Moore, '99. Faculty of Comp. Med.: J. C. Moore, '97; G. T. Stevenson, '97.

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## McGILL LAWN TENNIS CLUB.

*President*—Prof. H. L. Callendar.

*Vice-President*—Campbell P. Howard, Arts, '97.

*Treasurer*—E. A. Grafton, M.D.

*Secretary*—J. Arthur Fairie, Med., '98.

*Committee*—Arts: S. Archibald, '97. Applied Science: P. Butler, '98. Medicine: J. L. Todd, '98. Law: J. R. Kennedy, '98. Graduates, Prof. C. B. Smith.

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## McGILL UNIVERSITY GLEE AND BANJO CLUB.

OFFICERS FOR 1896-97.

*Hon. President*—J. C. Cameron, M.D.

*President*—C. F. Morrison, Med., '97.

*Vice-President*—F. W. Wilson, Med., '97.

*Secretary*—J. Arthur Fairie, Med., '98.

*Leader of Glee Club*—P. T. Moore, Arts, '98.

*Asst.-Leader of Glee Club*—M. Burke, Arts, '99.

*Leader of Banjo Club*—Warren Lynch, Med., '98.

*Business Manager*—J. H. Larmonth, B.A.Sc.

*Asst.-Business Manager*—G. Hillary, App. Sc., '98.

# Donations to the University Library.

APRIL 23, 1895, TO APRIL 18, 1896.

|                                                                         | VOLS. |                                                          | VOLS. |
|-------------------------------------------------------------------------|-------|----------------------------------------------------------|-------|
| Academy of Natural Science,<br>Philadelphia.....                        | 1     | Columbia College, New York<br>City.....                  | 2     |
| Adams, F. D., Ph.D.....                                                 | 3     | Copp, Clark Co.....                                      | 1     |
| Alcock, A. F.....                                                       | 26    | Cornell University.....                                  | 1     |
| Aldrich, Hon. N. W.....                                                 | 7     | Coussirat, Rev. D., and others                           | 86    |
| American Academy of Arts...                                             | 1     | Crittenden, J. P.....                                    | 1     |
| American Academy of Arts and<br>Sciences.....                           | 4     | Crosskill, Hon. H.....                                   | 3     |
| American Institute of Mining<br>Engineers.....                          | 5     | Dalhousie College and Univer-<br>sity.....               | 1     |
| American Society of Civil En-<br>gineers.....                           | 11    | Darey, P. J., LL.D.....                                  | 5     |
| American Society Mechanical<br>Engineers.....                           | 4     | Dartmouth College.....                                   | 2     |
| American Therapeutic Associa-<br>tion.....                              | 3     | Dawson, Sir J. W.....                                    | 24    |
| Amherst College.....                                                    | 1     | Dewey, Melvil.....                                       | 1     |
| Anonymous Donors.....                                                   | 13    | Dominion Government.....                                 | 22    |
| Auckland University College..                                           | 1     | Dougall, Miss L.....                                     | 6     |
| Avery, Mr. and Mrs. S. P., and<br>Trustees Columbia College..           | 1     | Douglas, Miss.....                                       | 1     |
| Barnett, J. D., Stratford.....                                          | 22    | Drummond, G. E.....                                      | 2     |
| Binmore, Miss.....                                                      | 2     | Dundee University College....                            | 1     |
| Bishop's College, Lennoxville.                                          | 2     | Durham College of Science....                            | 1     |
| Blackwood, Miss.....                                                    | 1     | Durham University.....                                   | 1     |
| Botterell, E. H.....                                                    | 6     | Edinburgh University.....                                | 1     |
| Bovey, Henry T., LL.D.....                                              | 1     | Egleston, Prof., Columbia Col-<br>lege.....              | 7     |
| Brazil, Inst. Agronomico.....                                           | 1     | Evans, Walter N.....                                     | 3     |
| Bristol University College....                                          | 1     | Fairbairn, Miss H.....                                   | 1     |
| British Association for Ad-<br>vancement of Science.....                | 1     | Fleet, C. J.....                                         | 1     |
| British Museum Trustees.....                                            | 59    | Frederiks Universitet, Chris-<br>tiania.....             | 1     |
| Brown University.....                                                   | 1     | Geological Society of America.                           | 3     |
| Brownell Car Co.....                                                    | 1     | Geological Society, New Jersey                           | 2     |
| Brownlow, E. B., Friends of<br>the late; through Wm. Mc-<br>Lennan..... | 99    | Geological Survey of Canada..                            | 1     |
| Brush, G. R.....                                                        | 13    | Glasgow University.....                                  | 1     |
| Bryn Mawr College.....                                                  | 1     | Gosnell, R. E., Victoria, B. C.                          | 5     |
| Burgess, T. J. W., M.D.....                                             | 3     | Graduates' Society.....                                  | 58    |
| California University.....                                              | 2     | Hadrill, G., Sec. Montreal<br>Board of Trade.....        | 6     |
| Carnegie Steel Co.....                                                  | 1     | Harrington, B. J., Ph.D.....                             | 3     |
| Ceylon Government.....                                                  | 1     | Hartford Theological Seminary                            | 2     |
| Chadenat, C., Paris.....                                                | 1     | Harvard Law School.....                                  | 1     |
| Colby, C. W., Ph.D.....                                                 | 1     | Harvard University.....                                  | 3     |
|                                                                         |       | Henderson, Miss G.....                                   | 1     |
|                                                                         |       | Ingres, Maxime.....                                      | 2     |
|                                                                         |       | Institute Civil Engineers, Lon-<br>don.....              | 6     |
|                                                                         |       | Institute Engineers and Ship-<br>builders, Scotland..... | 1     |

| VOLS.                                                 |     | VOLS.                                                     |     |
|-------------------------------------------------------|-----|-----------------------------------------------------------|-----|
| Institute Mechanical Engineers,<br>London.....        | 7   | Nova Scotia Superintendent of<br>Education .....          | 1   |
| Iowa State University.....                            | 1   | Oliver, C.A., M. D.....                                   | 1   |
| Ives, H. R.....                                       | 1   | Ontario Department of Agri-<br>culture.....               | 5   |
| Johns Hopkins University. ...                         | 3   | Ontario Government.....                                   | 2   |
| Johnson, George, Dept. of<br>Agriculture, Canada..... | 1   | Osler, William, M. D.....                                 | 1   |
| Kerallain, Mons. R. de, Quim-<br>per, France.....     | 1   | Owen's College, Manchester..                              | 1   |
| King's College, London:.....                          | 2   | Parliamentary Library, Ottawa                             | 12  |
| King's College, Windsor.....                          | 1   | Penhallow, D. P.....                                      | 5   |
| Lafleur, Paul.....                                    | 2   | Pennsylvania University.....                              | 1   |
| Lawes, Sir J. B., Rothamsted,<br>Herts.....           | 1   | Perkins Institute.....                                    | 1   |
| Leland Stanford Junior Univer-<br>sity.....           | 1   | Peterson, William, LL.D.....                              | 8   |
| Lick Observatory.....                                 | 1   | (de) Peyster, General, J. W...                            | 1   |
| Lighthall, W. D.....                                  | 5   | Plow, William.....                                        | 1   |
| London University.....                                | 2   | Pope, J.....                                              | 1   |
| Macdonald, W. C.....                                  | 25  | Princeton College.....                                    | 2   |
| Macdonnell, Mrs. R.....                               | 1   | Prowse, Hon. D. W., Q. C....                              | 1   |
| Mackay, Estate of late Captain<br>H. B.....           | 2   | Punjab University.....                                    | 1   |
| Mackay, Miss.....                                     | 4   | Queen's College, Galway.....                              | 1   |
| Mackay, Miss May.....                                 | 2   | Queen's College, Kingston....                             | 1   |
| Manitoba Queen's Printer.....                         | 2   | Quebec Provincial Government                              | 9   |
| Manitoba University.....                              | 2   | Quebec Superintendent of Edu-<br>cation.....              | 2   |
| Mason College, Birmingham..                           | 2   | Redpath, Mrs. Peter.....                                  | 154 |
| Massachusetts, Railroad Com-<br>missioners.....       | 1   | Rice, William, London.....                                | 1   |
| McGill College Book Club....                          | 194 | Rochester University.....                                 | 1   |
| McLennan, Francis.....                                | 68  | Royal Colonial Institute.....                             | 1   |
| Medical Faculty.....                                  | 8   | Royal Society of Canada.....                              | 1   |
| Melbourne University.....                             | 1   | Royal Society of London.....                              | 21  |
| Mendelssohn Choir, Members<br>of the.....             | 14  | Royal University of Ireland..                             | 1   |
| Ministère des Travaux Publics,<br>Paris.....          | 1   | Rusk, J. M., Sec. U. S. Dept:<br>Agric.....               | 1   |
| Moffatt, Miss.....                                    | 1   | Salem Public Library.....                                 | 1   |
| Molson, J. H. R.....                                  | 727 | Secretary's Office (McGill Uni-<br>versity).....          | 5   |
| Montreal Board of Trade.....                          | 1   | Secretary of State, per Wm.<br>Rice, London.....          | 2   |
| Mott, Henry.....                                      | 4   | Siam, H. M. the King of.....                              | 39  |
| National Academy of Sciences,<br>Washington.....      | 1   | Smith College.....                                        | 1   |
| National Electric Light Asso-<br>ciation.....         | 2   | Smith, Sir Donald A.....                                  | 31  |
| Natural History Society, Mont-<br>real.....           | 1   | South Wales and Monmouth-<br>shire University College.... | 1   |
| New Brunswick Regiment,<br>Canadian Artillery.....    | 1   | St. Andrews University.....                               | 1   |
| New Brunswick University....                          | 1   | Stanley, W. F.....                                        | 1   |
| New York Academy of Science                           | 1   | Stock, Elliot, London.....                                | 1   |
| New York State Library.....                           | 1   | Sydney University, Sydney,<br>N.S. W.....                 | 1   |
| Nichol, Dr. W. G.....                                 | 12  | Thwaites, R. G., Madison, Wis.                            | 23  |
| Norwich Free Academy.....                             | 1   | Toronto Department of Educa-<br>tion.....                 | 1   |
| Nova Scotia Historical Society                        | 2   | Toronto Public Library.....                               | 2   |
|                                                       |     | Toronto University.....                                   | 5   |
|                                                       |     | Trelease, W., Director Missouri<br>Botanical Gardens..... | 1   |
|                                                       |     | Trinity College, Toronto.....                             | 3   |

|                                 | VOLS. |                                      | VOLS. |
|---------------------------------|-------|--------------------------------------|-------|
| Tulane University, Louisiana..  | 1     | Graham, 2 manuscripts ;              |       |
| Tupper, Hon. Sir Charles....    | 2     | Richard White, 1 manu-               |       |
| University College, Wales....   | 2     | script; W. G. G. Cole, 2             |       |
| Unknown Source.....             | 18    | photographs.....                     | 15    |
| U. S. Army Engineering Dept.    | 6     | J. R. Dougall, <i>The Daily Wit-</i> |       |
| U. S. Bureau of Education....   | 5     | <i>ness</i> for 1895.....            |       |
| U. S. Coast and Goedetic Sur-   |       | Hon. the Commissioner of             |       |
| vey.....                        | 1     | Patents, Patent Office Re-           |       |
| U. S. Fish Commission.....      | 4     | ports, <i>unbd.</i>                  |       |
| U. S. Geological Survey.....    | 12    | American Society of Civil En-        |       |
| U. S. Interior Department....   | 8     | gineers.....                         | 3     |
| U. S. National Museum.....      | 2     | American Society of Mechani-         |       |
| Vassar College.....             | 2     | cal Engineers.....                   | 1     |
| Vermont University.....         | 1     | Bovey, H. T., LL.D.....              | 1     |
| Victoria University, Toronto..  | 1     | Engineers' Club of Philadelphia      | 3     |
| Webster, J. C.....              | 2     | Garth, Henry W.....                  | 3     |
| Wellesley College.....          | 2     | Graduates' Society.....              | 2     |
| Wickstead, G.W.....             | 1     | Institution of Civil Engineers,      |       |
| Wintle, H. C.....               | 2     | London.....                          | 1     |
| Worcester Polytechnic Institute | 1     | Institution of Mechanical En-        |       |
| Yale University.....            | 2     | gineers, London.....                 | 2     |
| Yorkshire College.....          | 2     | McCuaig, Mrs. M., Political          |       |
| Presented by Royal Society of   |       | Broadsides, 1837 & 1838..            | 7     |
| London, 1 chart; Dr. Har-       |       | Ministère des Travaux Publics,       |       |
| rington, 1 broadside; Hon.      |       | Paris.....                           | 1     |
| J. S. Hall, 2 maps; Francis     |       | National Electric Light Asso-        |       |
| McLennan, 2 maps; R. E.         |       | ciation, New York.....               | 1     |
| Goshell, 2 maps; Hon. E. J.     |       | Society of Engineers.....            | 1     |
| Flynn, Commissioner of          |       | Stephens, G. W.....                  | 6     |
| Crown Lands, 2 maps; Hugh       |       |                                      |       |

## Donations to the Peter Redpath Museum.

APRIL, 1895, TO APRIL, 1896.

- Bailey, Mr. C. F. D., mounted skeleton of parrot.  
 Baker, Walter & Co., Boston, through Mr. A. S. Wheeler, series of specimens illustrating the cocoa plant and its products.  
 Boyd, Miss Daisy, specimens of *Euplectella* and *Lamellibranch* from the Philippine Islands.  
 Bremner, Mr. C. P., Skull of Porpoise, St. Lawrence.  
 Brodie, Alex., B.A. Sc., Graptolites from Levis.  
 Brown, Mr. Geo. S., specimen of *Ostrea gigantea* from Prince Edward Island.  
 Buchan, Mr. J. S., Lava and other specimens from Italy.  
 Chambers, Mr. E. T., specimen of *Ostrea* from the Pleistocene, Beauport, Que.  
 Chase & Sanborn, collection of coffees.  
 Cushing, H.B., B.A., mounted specimens of Canadian grasses and sedges.  
 Dawson, Dr. G. M., Ottawa, about fifty specimens of minerals and rocks, principally large specimens.  
 Dawson, Sir J. W., slabs with reptilian foot-prints, S. Joggins, Nova Scotia.  
 Dawson, Sir J. W., F.R.S., fossil plants, footprints and slab of Naiadites, etc., from the coal formation, South Joggins.



- Dawson, Master Owen, Ottawa, specimen of *Clavaria* from Little Metis.
- Evans, N. Norton, M.A. Sc. specimen of cylindrite from Bolivia.
- Ferrier, W. F., B.A.Sc., Ottawa, specimen of mendipite, from the Mendip Hills, England.
- Francis, Mr. Bernard, North Sydney, C.B., six specimens of fossil plants from Sydney mine.
- Gairdner, Miss Helen, Alaskan plants.
- Geological Survey, Ottawa, per W. F. Ferrier, B.A.Sc., two specimens of bis-muthinite from Tudor, Hastings Co., Ont.
- Geological Survey, Ottawa, per Dr. R. W. Ells, two large groups of mica crystals from the Hycok Mine, Hull, P.Q.
- Geological Survey, Ottawa, per A. E. Barlow, M.A., fourteen specimens of ores from the Sudbury district, and six specimens of rocks from miscellaneous localities.
- Griffin, Mr. Alfred, specimen of a parsnip, showing remarkable growth.
- Herzer, Rev. H. Berea, Ohio, two specimens of *Psaronius* (*Winchellia*) *fascina*, coal formation.
- Higbie, Prof. Alfred, A. M., College Park, California, specimen of Stalagmitic Incrustation of a box in the Overman Silver Mining Company's shaft, Gold Hill, Nevada.
- Hillary, Mr. G. M., Whitby, Ont., specimen of marl and freshwater shells.
- Julien, Mr. Louis, additional specimens from the caves of Mentone.
- Lefroy, O.E., B.A., St. Andrews, Que., specimen of Triton with divided tail.
- Le Rossignol, J. E., B.A., Manganese ore from Germany, selenite from Colorado.
- Matthew, Mr. R. G., specimen of blaze on a tree.
- McLennan, Francis, B.C.L., Marine Algæ from the New England coast.
- McLennan, Francis, B.C.L., second collection of Marine Algæ from the New England coast.
- Molson, Mrs., Belmont Hall, mummy box, emblematic stone, tablet and emblematic fingers; also two ushebtis, all from Egypt.
- Monckton, Mr. G. F., Vancouver, B.C., collection of Tertiary plants from Burrard Inlet, B.C.
- Mott, Mr. H., specimen of marble from Napoleon column, Boulogne, France.
- Müller, Baron Von, Australia, collection of Australian plants.
- Müller, Baron Von, Australia, second collection of Australian plants.
- Nelson, Dr. Wolfred, New York, tooth of mastodon, from Dearborn, Indiana.
- Nelson, Dr. Wolfred, New York, iron ore and manufactured iron, Cedartown, Alabama; also concretion from Yorkville, Texas.
- Norris, Mr. Arthur E., specimen of serpentine from Essex Co., New York.
- Patterson, Mr. W. F., *Conularia trentonensis*, Mile End quarries, Montreal.
- Robertson, Rev. H. A., Erromanga, stone collar, necklaces, dresses, spears, shells and beans from Erromanga, New Hebrides.
- Roddick, Prof. T. G., mummy of a lady, from an Egyptian tomb in Hawara el Mucktaa, Fayoum, Egypt.
- Ross, Capt., tooth of Beluga.
- Shepherd, Prof. F. J., M.D., skeleton of Beaver.
- Shepherd, Prof. F. J., M.D., skull of Esquimaux from Greenland.
- Smith, Messrs., Papineau Road, additional bones of Beluga.
- Warren, Mr. Edward, Pincher Creek, Alberta, skeleton of a prairie Gopher.
- Whittemore, Prof., Grand Rapids, Mich., calcite crystals from the carboniferous limestone, Michigan.

## BENEFACTORS OF

# McGill University, Montreal.

### 1. GENERAL ENDOWMENTS AND SUBSCRIPTIONS FOR THE UNIVERSITY AND THE FACULTY OF ARTS.

#### 1. ORIGINAL ENDOWMENT, 1811.

THE HONORABLE JAMES MCGILL, who was born at Glasgow, 6th Oct., 1744, and died at Montreal, 19th Dec., 1813, by his last will and testament, under date 8th January, 1811, devised the Estate of Burnside, situated near the City of Montreal, and containing forty-seven acres of land, with the Manor House and Buildings thereon erected, and also bequeathed the sum of ten thousand pounds in money unto the "Royal Institution for the Advancement of Learning," a Corporation constituted in virtue of an Act of Parliament passed in the Forty-first Year of the Reign of His Majesty, King George the Third, to erect and establish a University or College, for the purpose of Education and the advancement of learning, in the Province of Lower Canada, with a competent number of Professors and Teachers to render such Establishment effectual and beneficial for the purposes intended; requiring that one of the colleges to be comprised in the said University should be named and perpetually be known and distinguished by the appellation of "McGill College." The value of the above mentioned property was estimated at the date of the bequest at.....\$120,000

#### 2. UNIVERSITY BUILDINGS, ETC.

THE WILLIAM MOLSON HALL, being the west wing of McGill College buildings with the connecting Corridors and Class Rooms, was erected in 1861, through the munificent donation of the founder whose name it bears.

THE PETER REDPATH MUSEUM, the gift of the donor whose name it bears, was announced by him as a donation to the University in 1880, and formally opened August, 1882.

THE WILLIAM C. McDONALD Physics building, and equipment of same, the gift of William C. McDonald, Esq., announced by him as a gift to the University in 1890, and formally opened February, 1893.

Lots for University buildings adjoining the College grounds confronting on McTavish St., presented by J. H. R. Molson, Esq.,—\$42,500.

THE PETER REDPATH LIBRARY BUILDING, the gift of Peter Redpath, Esq., announced by him as a gift to the University in 1891, and formally opened Oct. 31st, 1893.

University Offices, Rooms in East Wing remodeled and furnished for office of Principal and Secretary and for a Board Room by W. C. McDonald, Esq., in 1895.

### 3. THE DONALD A. SMITH ENDOWMENT FOR THE HIGHER EDUCATION OF WOMEN.

This endowment, given by the Honorable Sir Donald A. Smith of Montreal, is for the education of women in the subjects of the Faculty of Arts, up to the standard of the examination for B. A., in classes wholly separate, to constitute a separate Special Course or College for women,—\$120,000.

## 4. ENDOWED CHAIRS, ETC.

- THE MOLSON CHAIR OF ENGLISH LANGUAGE AND LITERATURE, in 1856, endowed by the Honorable John Molson, Thomas Molson, Esq., and William Molson, Esq.,—\$20,000; and supplemented in 1882 by John H. R. Molson, Esq., with a further sum of \$20,000. Total \$40,000.
- THE PETER REDPATH CHAIR OF PURE MATHEMATICS (founded as Chair of Natural Philosophy), in 1871, endowed by Peter Redpath, Esq.—\$20,000.
- THE LOGAN CHAIR OF GEOLOGY, in 1871, endowed by Sir W. E. Logan, LL.D., F.R.S., and Hart Logan, Esq.—\$20,000.
- THE JOHN FROTHINGHAM CHAIR OF MENTAL AND MORAL PHILOSOPHY, in 1873, endowed by Miss Louisa Frothingham,—\$20,000, and supplemented in 1891 with a further sum of \$20,000. Total \$40,000.
- THE MAJOR HIRAM MILLS CHAIR OF CLASSICS, in 1882, endowed by the last will of the late Major Hiram Mills of Montreal,—\$42,000.
- THE DAVID J. GREENSHIELDS CHAIR OF CHEMISTRY AND MINERALOGY in the Faculties of Arts and Applied Science, in 1883, endowed by the last will of the late David J. Greenshields, Esq., of Montreal, with the sum of \$40,000, half of which is devoted to the Faculty of Arts.
- THE WILLIAM C. McDONALD CHAIRS OF PHYSICS, endowed by William C. McDonald, Esq., in 1890,—\$50,000; in 1893, \$50,000. Total \$100,000.
- THE JOHN FROTHINGHAM PRINCIPAL FUND, to be invested for the endowment of the Principalship of the University; founded by the Rev. Frederick Frothingham and Mrs. J. H. R. Molson,—\$40,000.
- THE CHARLES GIBB BOTANICAL ENDOWMENT, received by subscriptions, the endowment to be invested by the Board of Governors and the income devoted to the maintenance of the Chair of Botany in the Faculty of Arts, and to procuring appliances therefor.

A Friend,— \$8,000.

Mrs Catherine Hill,—\$200. Total \$8 200.

- W. C. McDONALD PHYSICS BUILDING Maintenance Fund, endowed by W. C. McDonald, Esq., to be invested and interest used to meet the expense of Heating, Lighting, Insurance, salaries of Demonstrators, Mechanicians, caretaker, etc., cleaning and repairing building and general supplies of materials for the work and for instruction,—\$150,000.

## 5. ENDOWMENT FOR PENSION FUND.

This endowment is given to be invested and kept as a Special Fund, the revenue arising from which to be used exclusively for providing Pensions or Retiring Allowances for members of the teaching staff of the Faculties of Arts and Applied Science.

|                            |          |
|----------------------------|----------|
| Hon. Sir Donald A. Smith,  | \$50,000 |
| John H. R. Molson, Esq.,   | 50,000   |
| William C. McDonald, Esq., | 50,000   |

Total, \$150,000

## 6. EXHIBITIONS AND SCHOLARSHIPS, ETC.

- THE JANE REDPATH EXHIBITION, in the Faculty of Arts,—founded in 1868 by Mrs. Redpath, of Terrace Bank, Montreal, and endowed with the sum of \$1,667.
- THE McDONALD SCHOLARSHIPS AND EXHIBITIONS, 10 in number, in the Faculty of Arts—founded in 1871, and endowed in 1882 with the sum of \$25,000 by William C. McDonald, Esq.
- THE CHARLES ALEXANDER SCHOLARSHIP, for Classics—founded in 1871 by Charles Alexander, Esq. Endowed in 1893 with the sum of \$2,000.
- THE BARBARA SCOTT SCHOLARSHIP FOR CLASSICAL LANGUAGE AND LITERATURE—founded by the last will of the late Miss Barbara Scott of Montreal, in the sum of \$2,000 in 1884.
- THE GEORGE HAGUE EXHIBITION—founded in 1881 in the Faculty of Arts.—Annual value, \$125.
- THE MAJOR HIRAM MILLS MEDAL AND SCHOLARSHIP—in the Faculty of Arts, founded by the will of the late Major Hiram Mills of Montreal, and endowed with the sum of \$1,500.

- T. M. THOMPSON, Esq.,—\$250 for two Exhibitions in September, 1871; \$200 for two Exhibitions in 1872,—\$450.
- REV. COLIN C. STUART—for the "Stuart Prize in Hebrew."—\$50.
- THE TAYLOR SCHOLARSHIP—founded in 1871, by T. M. Taylor, Esq.—Annual value \$100—terminated in 1878.
- PROFESSOR ALEXANDER JOHNSON—for Scholarship for 3 Sessions, terminated 1886-87,—\$350.
- HER MAJESTY'S COMMISSION for the Exhibition of 1851—Nomination Scholarships for 1891, 1893 and 1895, value £150 annually, tenable for two years.
- THE PHILIP CARPENTER FELLOWSHIP—founded by Mrs. Philip Carpenter, for the Maintenance of a Post-Graduation Teaching Fellowship or Scholarship in Natural Science or some branch thereof in the Faculty of Arts in McGill College, endowed with the sum of \$7,000.
- A Lady, to provide four free tuitions in the Faculty of Arts for sessions 1892-93 and 1893-94.

## 7. ENDOWMENTS OF MEDALS AND PRIZES.

- In 1836 Henry Chapman, Esq. founded a gold medal, to be named the "Henry Chapman Gold Medal," to be given annually in the graduating class in Arts. This medal was endowed by Mr. Chapman in 1874, with the sum of \$700.
- In 1830 the sum of £200, presented to the College by H.R.H. the Prince of Wales, was applied to the foundation of a Gold Medal, to be called the "Prince of Wales Gold Medal," which is given in the graduating class for Honour Studies in Mental and Moral Philosophy.
- In 1864 the "Anne Molson Gold Medal" was founded and endowed by Mrs. John Molson of Belmont Hall, Montreal, for an Honour Course in Mathematics and Physics.
- In the same year the "Shakespeare Gold Medal," for an Honour Course, to comprise and include the works of Shakespeare and the Literature of England from his time to the time of Addison, both inclusive, and such other accessory subjects as the Corporation may from time to time appoint, was founded and endowed by citizens of Montreal, on occasion of the three hundredth anniversary of the birth of Shakespeare.
- In the same year the "Logan Gold Medal," for an Honour Course in Geology and Natural Science, was founded and endowed by Sir William Logan, LL.D., F.R.S., F.G.S., etc.
- In 1874 a Gold and a Silver Medal were given by His Excellency the Earl of Dufferin, Governor-General of Canada, for competition in the Faculty of Arts, and continued till 1878.
- In 1875 the "Neil Stuart prize in Hebrew" was endowed by Neil Stuart, Esq., of Vankleek Hill, in the sum of \$340.
- In 1880 a Gold and a Silver Medal were given by His Excellency the Marquis of Lorne, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science; continued till 1883.
- In 1883 a Gold, Silver and Bronze Medal were given by R. J. Wicksteed, Esq., M.A., LL.D., for competition in "Physical Culture," by Students in the Graduating Class and 2nd year, who have attended the University Gymnasium. The Gold Medal was continued to 1889 and the Silver and Bronze have been continued to date.
- In 1884 a Gold and a Silver Medal were given by His Excellency the Marquis of Lansdowne, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science, continued till 1888.
- In 1888 a Gold and a Silver Medal were given by His Excellency Lord Stanley, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.
- THE "CHARLES G. COSTER MEMORIAL PRIZE" for general proficiency—given annually by Colin H. Livingstone, Esq., B.A., founded in 1889.
- In 1894 a Gold and a Silver Medal were given by His Excellency The Earl of Aberdeen, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.



## 8. SUBSCRIPTIONS TO GENERAL ENDOWMENT.

1856.

|                                 |          |                               |          |
|---------------------------------|----------|-------------------------------|----------|
| John Gordon McKenzie, Esq.....  | \$200    | Forward.....                  | \$23,420 |
| Ira Gould, Esq.....             | 200      | Moses R. David, Esq.....      | 400      |
| John Frothingham, Esq.....      | 200      | Wm. Carter, Esq.....          | 400      |
| John Torrance, Esq.....         | 200      | Thomas Patton, Esq.....       | 400      |
| James B. Greenfields, Esq.....  | 125      | Wm. Workman, Esq.....         | 600      |
| William Barry Lamb, Esq.....    | 120      | Hon. S. A. T. Galt.....       | 400      |
| Sir George Simpson, Knight..... | 1000     | Hon. Luther H. Holton.....    | 400      |
| Henry Thomas, Esq.....          | 1000     | Henry Lyman, Esq.....         | 600      |
| John Redpath, Esq.....          | 1000     | David Torrance, Esq.....      | 400      |
| James McDougall, Esq.....       | 600      | Edwin Atwater, Esq.....       | 400      |
| James Torrance, Esq.....        | 600      | Thomas Hart, Esq.....         | 400      |
| Hon. James Ferrier, Esq.....    | 1000     | Wm. Forsyth Grant, Esq.....   | 400      |
| Harrison Stephens, Esq.....     | 600      | Robert Campbell, Esq.....     | 400      |
| Henry Chapman, Esq.....         | 600      | Alfred Savage, Esq.....       | 600      |
| Honorable Peter McGill.....     | 600      | James Ferrier, jun., Esq..... | 600      |
| John James Day, Esq.....        | 600      | William Stephen, Esq.....     | 400      |
| Thomas Brown Anderson, Esq....  | 600      | N. S. Whitney, Esq.....       | 600      |
| Peter Redpath, Esq.....         | 600      | William Dow, Esq.....         | 600      |
| Thomas M. Taylor, Esq.....      | 0-0      | William Watson, Esq.....      | 400      |
| Joseph McKay, Esq.....          | 100      | Edward Major, Esq.....        | 400      |
| Donald Lorn McDougall, Esq..... | 600      | Hon. Charles Dewey Day.....   | 200      |
| Hon. Sir John Rose.....         | 600      | John R. Esdaile, Esq.....     | 200      |
| Charles Alexander, Esq.....     | 600      |                               |          |
| Forward.....                    | \$23,400 | Total.....                    | \$35,200 |

1871.

|                               |          |                                  |          |
|-------------------------------|----------|----------------------------------|----------|
| William Molson, Esq.....      | \$500    | Forward.....                     | \$28,800 |
| William C. McDonald, Esq..... | 500      | Messrs. A. & W. Robertson.....   | 500      |
| Thomas Workman, Esq.....      | 500      | Messrs. Sinclair, Jack & Co..... | 150      |
| John Frothingham, Esq.....    | 500      | John Reddy, M.D.....             | 100      |
| J. H. R. Molson, Esq.....     | 5000     | Wm. Lund, Esq.....               | 100      |
| John McLennan, Esq.....       | 1000     | Kenneth Campbell, Esq.....       | 100      |
| B. Gibb, Esq.....             | 600      | R. A. Ramsay, Esq.....           | 100      |
| W. Notman, Esq.....           | 600      | Wm. Rose, Esq.....               | 50       |
| T. W. Ritchie, Esq.....       | 600      |                                  |          |
| Forward.....                  | \$28,800 | Total.....                       | \$30,100 |

1881-82

|                                |          |                                 |          |
|--------------------------------|----------|---------------------------------|----------|
| Hugh McLennan, Esq.....        | \$5000   | Forward.....                    | \$21,000 |
| G. A. Drummond, Esq.....       | 4000     | O. S. Wood, Esq.....            | 1000     |
| Geo. Hume, Esq.....            | 3000     | J. S. McLachlan, Esq.....       | 1000     |
| M. H. Gault, Esq.....          | 2000     | J. B. Greenfields, Esq (London) | 1000     |
| Andrew Robertson, Esq.....     | 1000     | Warden King, Esq.....           | 1000     |
| Robertson Campbell, Esq.....   | 1000     | W. B. Cumming, Esq.....         | 1000     |
| Sir Jos. and Lady Hickson..... | 1000     | Mrs. How Ramsay.....            | 500      |
| Mrs. Andrew Dow.....           | 1000     | R. A. Ramsay, Esq.....          | 500      |
| Alexander Murray, Esq.....     | 1000     | H. H. Wood, Esq.....            | 500      |
| Miss Orkney.....               | 1000     | James Burnett, Esq.....         | 500      |
| Hector McKenzie, Esq.....      | 1000     | Charles Gibb, Esq.....          | 500      |
| Forward.....                   | \$21,000 | Total.....                      | \$28,500 |

1883-84.

Edward Mackay, Esq.....\$5000.



## 9. SUBSCRIPTIONS FOR CURRENT EXPENSES, 1881-82.

|                              |        |                           |        |
|------------------------------|--------|---------------------------|--------|
| Principal Dawson             | \$1000 | being                     | \$1000 |
| J. H. R. Molson, Esq.        | 1000   | per annum, 5 years, being | 5000   |
| George Stephen, Esq.         | 1000   | " " "                     | 5000   |
| Hon. Donald A. Smith         | 1000   | " " "                     | 5000   |
| David Morrice, Esq.          | 200    | " " "                     | 1000   |
| Messrs. Gault Brothers & Co. | 200    | " " "                     | 1000   |
| Messrs. S. H. & A. S. Ewing  | 200    | " " "                     | 1000   |
| Hon. Robert Mackay           | 300    | " 2 "                     | 600    |
| Jonathan Hodgson, Esq.       | 100    | " 5 "                     | 500    |
| Geo. M. Kinghorn, Esq.       | 100    | " 5 "                     | 500    |
| Thomas Craig, Esq.           | 100    | " 2 "                     | 200    |
| John Rankin, Esq.            | 200    | being                     | 200    |
| John Duncan, Esq.            | 200    | "                         | 200    |
| Robert Benny, Esq.           | 100    | "                         | 100    |
| Miss E. A. Ramsay            | 100    | "                         | 100    |
| Hugh Paton, Esq.             | 50     | for 2 years, being        | 100    |
| George Brush, Esq.           | 25     | for 5 years, being        | 125    |
| J. M. Douglas, Esq.          | 50     | being                     | 50     |
| James Court, Esq.            | 50     | "                         | 50     |
| David J. Greenshields, Esq.  | 300    | "                         | 300    |

Total.....\$11,215

1887-88.

|                                           |        |                           |        |
|-------------------------------------------|--------|---------------------------|--------|
| John H. R. Molson, Esq.                   | \$1000 | per annum, 3 years, being | \$3000 |
| W. C. McDonald, Esq.                      | 1000   | " " "                     | 3000   |
| Peter Redpath, Esq.                       | 1000   | " " "                     | 3000   |
| Hon. Sir D. A. Smith, K.C.M.G.            | 1000   | " " "                     | 3000   |
| Hon. James Ferrier                        | 500    | " " "                     | 1500   |
| Sir Joseph Hickson                        | 500    | " " "                     | 1500   |
| Hugh McLennan, Esq.                       | 250    | " " "                     | 750    |
| E. B. Greenshields, Esq.                  | 250    | " " "                     | 750    |
| George Hugue, Esq.                        | 250    | " " "                     | 750    |
| John Molson, Esq.                         | 250    | " " "                     | 750    |
| Samuel Finley, Esq.                       | 250    | " " "                     | 750    |
| Mrs. Mackay, \$100 annually, 1884 to 1887 |        |                           | 300    |

Total.....\$19,250

## 10. FOR THE SUPPORT OF THE CHAIR OF BOTANY, 1882-84

|                       |       |                               |        |
|-----------------------|-------|-------------------------------|--------|
| Principal Dawson      | \$500 | per annum, for 5 years, being | \$2500 |
| Hon. Sir D. A. Smith  | 250   | " " "                         | 1250   |
| J. H. R. Molson, Esq. | 100   | " " "                         | 500    |
| Mrs. J. H. R. Molson  | 100   | " " "                         | 500    |
| G. Hagne, Esq.        | 100   | " " "                         | 500    |
| Mrs. Redpath          | 100   | " " "                         | 500    |
| Hugh McKay, Esq.      | 100   | " " "                         | 500    |
| Robert Mont, Esq.     | 100   | " " "                         | 500    |
| W. C. McDonald, Esq.  | 100   | " " "                         | 500    |
| Charles Gibb, Esq.    | 50    | " " "                         | 250    |
| Miss Orkney           | 50    | " " "                         | 250    |
| Robert McKay, Esq.    | 50    | " " "                         | 250    |
| Mr. Molson            | 50    | " " "                         | 250    |
| Mrs. John Molson      | 50    | " " "                         | 250    |
| John Stirling, Esq.   | 50    | " " "                         | 250    |
| Warden King, Esq.     | 50    | " " "                         | 250    |
| Miss Hall             | 50    | " " "                         | 250    |
| Robert Angus, Esq.    | 50    | " " "                         | 250    |
| D. A. P. Watt, Esq.   | 50    | " " "                         | 250    |
| Hugh McLennan, Esq.   | 25    | " " "                         | 125    |
| Sir Joseph Hickson    | 10    | " " "                         | 50     |
| Mrs. Phillips         | 10    | " " "                         | 10     |

\$9,935

## 11. BOTANIC GARDEN, ETC.

Subscriptions 1890-91.

|                          |       |                            |        |
|--------------------------|-------|----------------------------|--------|
| Hugh McLennan, Esq.....  | \$100 | Forward.....               | \$900  |
| Gilman Cheney, Esq.....  | 100   | Jonathan Hodgson, Esq..... | 100    |
| James Johnston, Esq..... | 100   | Robert Mackay, Esq.....    | 100    |
| James Slessor, Esq.....  | 100   | H. Shorey, Esq.....        | 50     |
| A friend .....           | 100   | J. S. Shearer, Esq.....    | 50     |
| Hugh Graham, Esq.....    | 100   | Geo. Sumner, Esq.....      | 25     |
| A. F. Gault, Esq.....    | 100   | A. Ramsay & Co.....        | 25     |
| W. T. Costigan, Esq..... | 100   | Garth & Co.....            | 25     |
| Jonathan Brown, Esq..... | 100   |                            |        |
| Forward.....             | \$900 | Total.....                 | \$1275 |

*To Erect Plant House in Botanic Garden.*

|                               |           |
|-------------------------------|-----------|
| Hon. Sir Donald A. Smith..... | \$362 00  |
| John H. R. Molson, Esq.....   | 361 51    |
| William C. McDonald, Esq..... | 361 02    |
|                               | <hr/>     |
|                               | \$1084 53 |

## 12. IN AID OF THE CHAIR OF HEBREW.

|                                |              |                                  |        |
|--------------------------------|--------------|----------------------------------|--------|
| Warden King, Esq.....          | in 1889      | \$50 per annum, 3 years, being.. | \$150  |
| Principal Sir William Dawson.. | "            | 50 " " " ..                      | 150    |
| Hon. Hugh Mackay.....          | "            | 50 " " " ..                      | 150    |
| A. F. Gault, Esq.....          | "            | 25 " " " ..                      | 75     |
| Geo. Hague, Esq.....           | "            | 25 " " " ..                      | 75     |
| T. A. Dawes, Esq.....          | "            | 25 " " " ..                      | 75     |
| S. Carsley, Esq.....           | "            | 25 " " " ..                      | 75     |
| S. Davis, Esq.....             | in 1892..... |                                  | 20     |
| Warden King, Esq.....          | "            | 50 per annum for 3 years.....    | 150    |
| A. F. Gault, Esq.....          | "            | 50 " " " ..                      | 150    |
| Robert MacKay, Esq.....        | "            | 50 " " " ..                      | 150    |
| Hugh McLennan, Esq.....        | "            | 25 " " " ..                      | 75     |
| George Hague, Esq.....         | "            | 25 " " " ..                      | 75     |
| T. A. Dawes, Esq.....          | "            | 25 " " " ..                      | 75     |
| S. Carsley, Esq.....           | "            |                                  | 25     |
| J. Murphy, Esq.....            | "            |                                  | 25     |
|                                |              | Total.....                       | \$1495 |

## 13. FOR MUSICAL INSTRUCTION IN THE DONALDA SPECIAL COURSE FOR WOMEN.

|                                                |       |
|------------------------------------------------|-------|
| Hon. Sir Donald A. Smith, session 1889-90..... | \$200 |
| " " " 1890-91.....                             | 200   |
|                                                | <hr/> |
| Total.....                                     | \$400 |

## 14. TO PROVIDE SESSIONAL LECTURERS, ETC.

|                                                                                                                |              |          |
|----------------------------------------------------------------------------------------------------------------|--------------|----------|
| Hon. Sir Donald A. Smith,                                                                                      | 1891-92..... | 3500     |
| do                                                                                                             | 1892-93..... | 4000     |
| do                                                                                                             | 1893-94..... | 4000     |
| do                                                                                                             | 1894-95..... | 4000     |
| do                                                                                                             | 1895-96..... | 4000     |
| Mrs. John H. R. Molson,                                                                                        | 1891-92....  | 300      |
| do                                                                                                             | 1892-93..... | 1000     |
| do                                                                                                             | 1893-94..... | 1000     |
| do                                                                                                             | 1894-95..... | 1000     |
| do                                                                                                             | 1895-96..... | 1000     |
| W. C. McDonald, Esq., to provide for certain salaries in the Department of Physics, etc., session 1894-95..... |              | 1430     |
|                                                                                                                | Total.....   | \$25,230 |

## 15. MISCELLANEOUS.

|                                                                                                                                                                       |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Hugh McLennan, Esq., subscription (\$50 per annum) towards expense of table at the Biological Station, Wood's Holl, Mass., for McGill Professor of Botany (1896)..... | \$250 |
| J. J. Arnton bequest to McGill University (1895).....                                                                                                                 | \$900 |

## II. ENDOWMENTS AND SUBSCRIPTIONS FOR THE FACULTY OF APPLIED SCIENCE.

### I. BUILDINGS, CHAIRS, ETC.

- THE WILLIAM SCOTT CHAIR OF CIVIL ENGINEERING, in 1884, endowed by the last will of the late Miss Barbara Scott, of Montreal,—\$30,000.
- THE DAVID J. GREENSHIELDS CHAIR OF CHEMISTRY AND MINERALOGY in the Faculties of Arts and Applied Science, in 1883, endowed by the last will of the late David J. Greenshields Esq., of Montreal, with the sum of \$40,000, half of which is devoted to Faculty of Applied Science.
- THE THOMAS WORKMAN DEPARTMENT OF MECHANICAL ENGINEERING—founded under the last will of the late Thomas Workman, Esq., and endowed with the sum of \$117,000. The sum of \$60,000 for the maintenance of Chair of Mechanical Engineering, with the assistance, shops, machinery and apparatus necessary thereto, \$57,000 to be expended in provision of necessary buildings, machinery and apparatus. Any balance of this to be added to the invested endowment for the maintenance of the said Department.
- WILLIAM C. McDONALD, Esq., toward erection of Thomas Workman Workshops, \$20,000.
- THE WILLIAM C. McDONALD ENGINEERING BUILDING, and Equipment of same—announced by the donor as a gift to the University in 1890, and formally opened February, 1893.
- THE WILLIAM C. McDONALD CHAIR OF ELECTRICAL ENGINEERING, endowed by William C. McDonald, Esq., in 1891, with the sum of \$40,000.
- MCDONALD ENGINEERING BUILDING Maintenance Fund, endowed by W. C. McDonald, Esq., in 1892, the income to be devoted to paying for Heating, Lighting, Insurance and Salary of Mechanician,—\$85,000.

### 2. ENDOWMENT FOR PENSION FUND.

This endowment is given to be invested and kept as a Special Fund, the revenue arising from which to be used exclusively for providing Pensions or Retiring Allowances for members of the teaching staff of the Faculties of Arts and Applied Science:

|                           |          |
|---------------------------|----------|
| Hon. Sir Donald A. Smith, | \$50,000 |
| John H. R. Molson, Esq.,  | 50,000   |
| Wm. C. McDonald, Esq.,    | 50,000   |

Total..... \$150,000

### 3. EXHIBITIONS AND SCHOLARSHIPS.

- THE SCOTT EXHIBITION—founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, and endowed in 1872 with the sum of \$1,100 subscribed by members of the Society and other citizens of Montreal. The Exhibition is given annually in the Faculty of Applied Science—Annual value \$60.
- THE BURLAND SCHOLARSHIP—founded 1882, by J. H. Burland, B.A.Sc., \$100 for a Scholarship in Applied Science, for three years, being \$300.
- HER MAJESTY'S COMMISSION for the Exhibition of 1851—Nomination Scholarships for 1891, 1893 and 1895, value £150 annually, each tenable for two years.
- THE DR. T. STERRY HUNT SCHOLARSHIP—founded by the will of the late Dr. T. Sterry Hunt, and endowed with the sum of \$2755, the income to be given and paid annually to a student or students of Chemistry.

## 4. MEDALS AND PRIZES.

In 1885 the British Association Gold Medal, for competition in the Graduating class in the Faculty of Applied Science, was founded by subscription of members of the British Association for the Advancement of Science, and by gift of the Council of the Association, in commemoration of its meeting in Montreal in the year 1884.

(See also under Medals and Prizes in Section I. 7.)

## 5. ENDOWMENTS AND SUBSCRIPTIONS FOR MAINTENANCE OF FACULTY OF APPLIED SCIENCE.

*Endowment Fund.*

|                              |        |                                 |        |
|------------------------------|--------|---------------------------------|--------|
| Daniel Torrance, Esq.....    | \$5000 | Forward.....                    | \$7000 |
| George Moffatt, Esq.....     | 1000   | Graduates' Endowment Fund—      |        |
| Charles J. Brydges, Esq..... | 1000   | Class 1890—\$70.00 a year for 5 |        |
|                              |        | years, \$350; received to date. | 85     |
| Forward.....                 | \$7000 | Total.....                      | \$7085 |

*Annual Subscriptions, 1871-1879.*

|                                                                  |          |                                                       |          |
|------------------------------------------------------------------|----------|-------------------------------------------------------|----------|
| Hon. James Ferrier (\$100 per annum, for 10 years).....          | \$1000   | Forward.....                                          | \$13,850 |
| Peter Redpath, Esq. (\$400 per annum, for 10 years).....         | 4000     | H. McLennan, Esq. (\$100 per annum, for 5 years)..... | 500      |
| John H. R. Molson, Esq. (\$400 per annum, for 10 years). ....    | 4000     | A. F. Gault, Esq. (\$100 per annum, for 5 years)..... | 500      |
| George H. Frothingham, Esq. (\$400 per annum, for 7 years). .... | 2800     | Gilbert Scott, Esq. (\$100 for 2 years).....          | 200      |
| T. Jas. Claxton, Esq. (\$100 per annum, for 6 years).....        | 600      | Joseph Hickson, Esq. (\$100 for 2 years).....         | 200      |
| Donald Ross, Esq. (\$50 per annum, for 5 years).....             | 250      | Principal Dawson (\$300 for 2 years).....             | 600      |
| Miss Mary Frothingham (\$100 per annum, for 3 years).....        | 1200     | His Excellency the Marquis of Lorne.....              | 500      |
| Forward.....                                                     | \$13,850 | Mrs. Redpath (Terrace Bank)...                        | 100      |
|                                                                  |          | Total.....                                            | \$16,450 |

*Towards Maintenance of Engineering Department.*

|                                                     |          |            |          |
|-----------------------------------------------------|----------|------------|----------|
| W. C. McDonald, Esq., in 1891.....                  | \$10,000 | Total..... | \$32,445 |
| do for advertising).....                            | 675      |            |          |
| do in reduction of deficiency, session 1893-4 ..... | 10,000   |            |          |
| do to cover certain salaries, session 1894-5.....   | 1,770    |            |          |
| do in reduction of deficiency, session 1894-5.....  | 10,000   |            |          |

*To provide lectures in Mechanical and Sanitary Engineering.*

|                              |       |                                    |       |
|------------------------------|-------|------------------------------------|-------|
| E. B. Greenshields, Esq..... | \$50  | Forward.....                       | \$161 |
| J. E. Bovey, Esq.....        | 50    | Jeffrey H. Burland, B.A.Sc., \$100 |       |
| Professor H. T. Bovey.....   | 61    | 2 years .....                      | 200   |
| Forward.....                 | \$161 | Smaller amounts.....               | 40    |
|                              |       | Total .....                        | \$401 |



*Chair of Practical Chemistry.*

|                          |         |
|--------------------------|---------|
| Hon. C. Dunkin, M.P..... | \$1200  |
| Principal Dawson.....    | 1200    |
| P. Redpath, Esq ....     | 226     |
| Total.....               | \$2,626 |

*For Maintenance of Chair of Mining Engineering and Metallurgy, 1891.*

|                         |              |                           |            |          |
|-------------------------|--------------|---------------------------|------------|----------|
| R. B. Angus, Esq.....   | \$2000       | Forward.....              | \$4000     | \$6200   |
| Mrs. Dow.....           | 1000         | James Ross, Esq.....      | 600        |          |
| Hugh McLennan, Esq..... | 1000         | E. K. Greene, Esq.....    | 750        |          |
| Miss Benny.....         | 1000         | Dr. T. Brainerd.....      | 750        |          |
| T. A. Dawes, Esq.....   | 750          | A. F. Gault, Esq.....     | 750        |          |
| A. A. Ayer, Esq ....    | 250          | Messrs. H. & A. Allan.... | 750        |          |
| G. W. Reid, Esq.....    | 100          | Hector Mckenzie, Esq..... | 750        |          |
| Evans Bros.....         | 100          | Peter Lyall, Esq.....     | 750        |          |
|                         | ————— \$6200 | A. Robertson, Esq .....   | 300        |          |
|                         |              | John Duncan, Esq.....     | 300        |          |
|                         |              | Geo. Hague, Esq.....      | 300        |          |
|                         |              | Jonathan Hodgson, Esq...  | 300        |          |
|                         |              | James Moore, Esq.....     | 200        |          |
|                         |              | Messrs Ames & Holden...   | 150        |          |
|                         |              | James Cooper, Esq.....    | 150        |          |
|                         |              |                           | —————      | 10,800   |
|                         |              |                           | Total..... | \$17,000 |

*Payable in three years:*

|                                          |      |
|------------------------------------------|------|
| Sir Wm. Dawson.....                      | 1000 |
| Alex. Stewart, Esq. (London, Eng.) ..... | 1500 |
| R. C. Reid, Esq .....                    | 1500 |

Forward.....\$4000 \$6200

*Class Rooms for Faculty of Applied Science, 1888.*

|                             |          |                          |        |
|-----------------------------|----------|--------------------------|--------|
| John H. R. Molson, Esq..... | \$3000   | W. C. McDonald, Esq..... | \$3000 |
| Total.....                  | \$6,000. |                          |        |

*Surveying and Geodetic Apparatus.*

|                          |      |
|--------------------------|------|
| W. C. McDonald, Esq..... | 1500 |
|--------------------------|------|

6. LIST OF SUBSCRIBERS AND DONORS TO THE EQUIPMENT OF THE  
NEW ENGINEERING BUILDINGS OF MCGILL UNIVERSITY, TO  
MAY, 1896.

|                                               |                         |                                                                                                              |                                      |
|-----------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Abbott, W.....                                | Equipment               | Blake Pump Co., The Geo. (New York & Boston) .....                                                           | Pump                                 |
| American Rail Joint Co (Cleveland, Ohio)..... | Specimens of Rail Joint | Bovey, Prof H. T.....                                                                                        | Books                                |
| American Steam Gauge Co. (Boston)             | Indicator.              | Bremner, A.....                                                                                              | \$50                                 |
| Archibald, H.....                             | Books                   | British Columbian Mills, Timber and Trading Company, Timber Beams of large Scantling for Testing Labor atory |                                      |
| Ashton Valve Co. (Boston).                    | Sectional Valve         | Brockhaus, Herr .....                                                                                        | Books                                |
| Bertram & Sons, J. (Dundas).                  | 24in. Planer            | Brodie & Harvey .....                                                                                        | \$50                                 |
| Birch & Co. J. (England).....                 | Hydraulic Tubes         | Brush, G.....                                                                                                | Boiler                               |
| Birks, Henry.....                             | Clock                   | Campbell Tile Co. (England), per Jordan & Locker.....                                                        | Equipment                            |
| Bishop, George.....                           | Equipment               | Campbell, Kenneth.....                                                                                       | \$50                                 |
| Blackwell, Kennet.....                        | Equipment               | Canadian General Electric Co. ....                                                                           | (Toronto), per F. Nichols. Equipment |
| Blake Mufg. Co., The Geo. F.....              | Blue Prints of Pump     |                                                                                                              |                                      |



|                                       |                        |                                      |                   |
|---------------------------------------|------------------------|--------------------------------------|-------------------|
| Canadian General Electric Co.....     |                        | Hearn & Harrison, per L. Harrison,   |                   |
| Electric Drill, Edison Generator      |                        | Barometer & Clock                    |                   |
| Canadian Government.....              |                        | Hersey, R.....                       | \$1200            |
| Collection of Canadian Timber         |                        | Hodgson, Jonathan.....               | \$200             |
| Canadian Pacific Railway Co., .....   |                        | Holden, A.....                       | Equipment         |
| Timber for Testing, Timber Beams      |                        | Hughes & Stephenson.....             | Equipment         |
| of large Scantling for Testing        |                        | Hutton, W. H.....                    | Equipment         |
| Laboratory, Photographs               |                        | Irwin & Hopper.....                  | Equipment         |
| Carsley, S.....                       | \$100                  | Ives, J. R.....                      | Cupola            |
| Carus-Wilson. Prof. C. A....          | Equipment              | Joyce, Alfred.....                   | \$50              |
| Cary, A. A.....                       | Photographs of Boilers | Jordan & Locker.....                 | Equipment         |
| Chadwick, F.....                      | Truss Models           | Kennedy, John.....                   | Equipment         |
| Chanteloup E.....                     | \$50                   | Timber Beams of large Scantling for  |                   |
| Claxton, L. J....                     | Timber Beams of large  | Testing Laboratory                   |                   |
| Scantling for Testing Laboratory      |                        | Kennedy, W. & Sons.....              |                   |
| Costigan, J.....                      | Equipment              | Kennedy, W. (Owen Sound)...Pump      |                   |
| Cowper, P. H.....                     |                        | American Turbine                     |                   |
| Model of Steam Engine                 |                        | Kerr, R. & W. ....                   | Tools             |
| Crocker-Wheeler Electric Motor Co.,   |                        | King & Son, Warden.....              | \$534             |
| The (New York).....                   | Motor                  | Laughlin-Hough Drawing Table Co.,    |                   |
| Crosby Steam Gauge and Valve Co.,     |                        | Drawing Tables                       |                   |
| (Boston).....                         | Gauge and Valve,       | Laurie & Bro, J.....                 | Compound Engine   |
| Indicator and Valves                  |                        | Lawson, A. J.....                    | Equipment         |
| Darling, Brown & Sharpe (Providence,  |                        | Lindsay & Co., C. F.....             | Equipment         |
| R. I.).....                           | 6 in. Rule             | Lovell & Son, John.....              | Books             |
| Date, John.....                       | Equipment              | Lyster, A. G.....                    | Drawings and      |
| Dawson, W. B.....                     | Iron Rail showing      | Sketches of London and Liverpool     |                   |
| effect of long immersion in water     |                        | Docks.                               |                   |
| Dominion Wire Manfg Co., per F.       |                        | Macpherson, A.....                   | Tools             |
| Fairman.....                          | Shaper                 | Mason, Dr.....                       | Equipment         |
| Drysdale, D.....                      | Tools                  | Maxwell & Co., E. J.....             | Equipment         |
| Drysdale, W.....                      | Tools                  | McCarthy, D. & J. (Sorel) .....      | \$300             |
| Earle, S. R.....                      | Air Injector           | McDonald, W. C.....                  | Experimental      |
| Edison General Electric Co., The..... |                        | Pump, Ewing's Hysteresis Testing     |                   |
| Two 450 light dynamos, Brake Shoe     |                        | Apparatus, Piano, Centrifugal        |                   |
| and Disc                              |                        | Pump, Experimental Boiler, Equip-    |                   |
| Egleston, Dr. (New York).....         | Framed                 | ment                                 |                   |
| Photograph of the Moon, Books         |                        | McDougall, Mrs. J.....               | \$4000            |
| Electric Welding Company, (Boston)    |                        | McLachlin Bros. (Arnprior).....      |                   |
| Equipment                             |                        | Timber for Testing                   |                   |
| Eureka Tempered Copper Co.,.....      | Equipment              | McLaren, D.....                      | \$100             |
| Ewan, A.....                          | \$100                  | McLaughlin Bros.....                 | Timber            |
| Felton & Guillaume.....               |                        | Beams of large Scantling for Test-   |                   |
| Samples of Cable Wire, etc            |                        | ing Laboratory                       |                   |
| Forsyth, R.....                       | Equipment              | McNally & Co., W. ....               | \$100             |
| Frothingham & Workman.....            | Tools                  | McPherson Sand Box Co. (Troy, N. Y.) |                   |
| Furlong, G. W., B. A. Sc.....         | Speci-                 | Model of Sand Box                    |                   |
| mens of Pine and Wood bored by        |                        | Miller Bros & Sons.....              | Elevator          |
| Teredos                               |                        | Mitchell, P.....                     | Equipment (\$300) |
| Gardner & Son., R. W.....             | 16 in. Lathe           | Mitchell & Co., R.....               | Equipment         |
| Gardner, R.....                       | Equipment              | Naismith, P. L., B. A. Sc.....       | Speci-            |
| Garth & Co.,.....                     | \$500                  | mens of Cast-Iron showing effect of  |                   |
| Garth, Henry.....                     | Equipment              | mine water                           |                   |
| Government of New South Wales.....    |                        | Nalder Bros & Co (England).....      |                   |
| Collection of Australian Timbers      |                        | Standard Cell                        |                   |
| Gower W. E.....                       |                        | National Electric Mfg. Co.....       |                   |
| Graham, H.....                        | \$100                  | 100 volt. Transformer, Transformers  |                   |
| Grier, G. A.....                      | Equipment              | Nicholson, Peter.....                | \$100             |
| Gurney & Co., E. & C.....             | \$604                  | Norton Emery Wheel Co., The          |                   |
| Hadfield, Messrs. (Sheffield).....    | Equipment              | (Worcester, U.S).....                | Equipment         |
|                                       |                        | Notman, Wm.....                      | Photographs       |
|                                       |                        | Ogilvie, W.....                      | \$500             |

|                                      |            |                                         |                                     |
|--------------------------------------|------------|-----------------------------------------|-------------------------------------|
| Palmer, A .....                      | Equipment  | Seeley, John.....                       | Insulators                          |
| Parker, M.....                       | Equipment  | Schaeffer & Budenberg (Brooklyn N.Y.)   | Double Indicator                    |
| Paton, H.....                        | Equipment  | Scholes, F.....                         | \$100                               |
| Peckham Motor Truck and Wheel Co.    |            | Seovill Mfg. Co.....                    | Equipment                           |
| (Kingston, N.Y.).....                |            | Sharp, Stewart & Co. (Manchester.       | Eng).....                           |
| Model of Motor Truck                 |            | Shearer, James.....                     | \$200                               |
| Pelton Water Wheel Co., The (New     |            | Sheppard, Chas.....                     | \$200                               |
| York).....                           | Two Motors | Siemens Bros. (London, Eng).....        | Cable Samples                       |
| Pennsylvania Railroad Co.....        | Work       | Smith, C. B.....                        |                                     |
| ing Drawings of Locomotives (32)     |            | Framed Photos of Bridges (2)            |                                     |
| Pillow, J. A.....                    | \$250      | Smith, R.....                           | Equipment                           |
| Pratt & Whitney (Hartford, Conn).... |            | Smith, R. Guilford.....                 | Books                               |
| Epicycloidal Gear Model              |            | Spence, J. P., C. E.....                | Specifica-                          |
| Prowse, G. R.....                    | Equipment  | tions and Drawings showing con-         | struction of Sault Ste. Marie Canal |
| Queensland Government per Sir        |            | Locks                                   |                                     |
| Thomas McIlwraith.....               |            | Steel Co. of Scotland, The.....         |                                     |
| Collection of Timbers                |            | Samples of Cable Wire, etc              |                                     |
| Radiator Co., (Toronto).....         | \$500      | St. George, P. W.....                   | Models                              |
| Ramsay & Son, A.....                 | \$100      | Stirling Co., The.....                  |                                     |
| Rathbun, E. W.....                   | \$112      | Sectional Blue Prints of Boilers        |                                     |
| Reddaway & Co, F.....                |            | Sturtevant Co., The B. F. (Boston)..... |                                     |
| Belt (valve\$50)                     |            | Blowers                                 |                                     |
| Redpath, F. R.....                   | Equipment  | Swan Lamp Mfg. Co.....                  | Lamps                               |
| Redpath, Mrs.....                    | \$100      | Taylor, A. T.....                       | \$300                               |
| Reed, G. W.....                      | \$100      | Tees & Co.....                          | Equipment                           |
| Reford, R.....                       | \$1000     | Thomson-Houston Co., The (Boston)       |                                     |
| Reid, R.....                         | Equipment  | Incandescent dynamos                    |                                     |
| Reid, R. G.....                      | \$1000     | Twytford & Co.....                      | Equipment                           |
| Renouf, E. M.....                    | Books      | Walker & Co., James.....                | Tools                               |
| Rhode Island Locomotive Works.....   |            | Wanklyn, F. L.....                      | Equipment                           |
| Photos of Locomotives                |            | Ward, Hon. J. K.....                    | \$50                                |
| Rife's Hydraulic Engine Mfg. Co.     |            | Warrington Wire Co.....                 |                                     |
| (Roanoke, Va., U.S.A.).....          |            | Cable Samples                           |                                     |
| Hydraulic Ram                        |            | Whittier Machine Co., The (Boston)      |                                     |
| Robb & Armstrong.....                |            | Electric Elevator                       |                                     |
| 80 H. P. High Speed Engine           |            | Wiley & Sons, John (New York).Books     |                                     |
| Robertson, J.....                    | Equipment  | Yale & Towne Mfg. Co. (Stamford,        |                                     |
| Rogers, Professor (Waterville, Maine |            | Conn).....                              | Equipment                           |
| Equipment                            |            | Yates & Thom.....                       |                                     |
| Ross, James.....                     | \$500      | Blue Prints of Machinery                |                                     |
| Rodden, W.....                       | Equipment  |                                         |                                     |
| Royal Electric Co., The.....         |            |                                         |                                     |
| 12 Arc Light Dynamos                 |            |                                         |                                     |
| Rutherford, W.....                   | Equipment  |                                         |                                     |
| Sadler, G. (Robin & Sadler).....     |            |                                         |                                     |
| Belting (\$400)                      |            |                                         |                                     |

The above representing a total of about \$80,000

## 7. FACULTY OF APPLIED SCIENCE LIBRARY ENDOWMENT.

|                          |       |                          |        |
|--------------------------|-------|--------------------------|--------|
| Hugh Paton.....          | \$ 25 | Forward.....             | \$ 600 |
| A. Joyce.....            | 25    | W. Rodden.....           | 25     |
| E. Gardner.....          | 50    | M. Parker.....           | 25     |
| H. Garth.....            | 100   | Robin & Sadler.....      | 50     |
| Hughes & Stephenson..... | 100   | J. Robertson, Esq.....   | 50     |
| R. Mitchell.....         | 300   | Mrs. John McDougall..... | 20     |
| Forward.....             | \$600 | Total.....               | \$770  |

### III. ENDOWMENTS AND SUBSCRIPTIONS IN AID OF THE FACULTY OF MEDICINE.

#### 1. LEANCHOIL ENDOWMENT.

Hon. Sir Donald A. Smith, K.C.M.G. .... \$50,000

#### 2. CAMPBELL MEMORIAL ENDOWMENT—\$53,000.

Established to commemorate the service rendered to the Faculty during 40 years by the late Dean, George W. Campbell, M.D., LL.D.

|                                  |          |                                         |          |
|----------------------------------|----------|-----------------------------------------|----------|
| Mrs. G. W. Campbell.....         | \$ 2000  | Forward.....                            | \$40,000 |
| H. A. Allan, Esq.....            | 1500     | D. C. MacCallum, M.D.....               | 500      |
| Hon. Sir D. A. Smith .....       | 1500     | Messrs. McLachlan Bros .....            | 500      |
| Sir George Stephen, Bart.....    | 1000     | Messrs. S. Greenshields, Son & Co. .... | 500      |
| R. B. Angus, Esq.....            | 1000     | Jonathan Hodgson, Esq.....              | 500      |
| George A. Drummond, Esq.....     | 1000     | Duncan McEachran, Esq., F. R.           |          |
| Alex. Murray, Esq.....           | 1000     | C. V. S.....                            | 500      |
| Robert Moat, Esq.....            | 1000     | George Ross, M.D.....                   | 500      |
| W. C. McDonald, Esq.....         | 1000     | T. G. Roddick, M.D.....                 | 500      |
| A Friend .....                   | 1000     | Wm. Gardner, M.D.....                   | 500      |
| Duncan McIntyre, Esq.....        | 1000     | G. P. Girdwood, M.D.....                | 500      |
| Alex. Buntin, Esq.....           | 1000     | G. E. Fenwick, M.D.....                 | 500      |
| A. F. Gault, Esq.....            | 1000     | Alex. Ramsay, Esq.....                  | 500      |
| M. H. Gault, Esq.....            | 1000     | Messrs. Cochrane, Cassils & Co. ....    | 500      |
| G. W. Stephens Esq.....          | 1000     | Sir Joseph Hickson .....                | 500      |
| James Benning, Esq.....          | 1000     | Allan Gilrour, Esq., Ottawa....         | 500      |
| R. P. Howard, M.D. ....          | 1000     | R. W. Shepherd, Esq.....                | 500      |
| Frank Buller, M.D.....           | 1000     | Miles Williams, Esq .....               | 300      |
| G. B. & J. H. Borland, Esqs..... | 1000     | Charles F. Smithers, Esq.....           | 250      |
| Miss Elizabeth C. Benny.....     | 1000     | John Kerry, Esq .....                   | 250      |
| J. C. Wilson, Esq.....           | 1000     | A. Baumgarten, Esq.....                 | 250      |
| Mrs. John Redpath.....           | 1000     | R. W. Elmenhorst, Esq.....              | 250      |
| Hon. John Hamilton.....          | 1000     | W. F. Lewis, Esq.....                   | 250      |
| Miss Orkney.....                 | 1000     | George Armstrong, Esq.....              | 250      |
| Hugh Mackay, Esq.....            | 1000     | J. M. Douglas, Esq .....                | 250      |
| Hector McKenzie, Esq .....       | 1000     | Messrs. H. Lyman, Sons & Co....         | 250      |
| Thomas Workman, Esq.....         | 1000     | William Osler, M. D.....                | 250      |
| Hugh McLennan, Esq.....          | 1000     | F. J. Shepherd, M.D.....                | 250      |
| O. S. Wood, Esq .....            | 1000     | Benj. Dawson, Esq.....                  | 200      |
| James Burnett, Esq .....         | 500      | R. Wolff, Esq .....                     | 150      |
| Andrew Robertson, Esq.....       | 500      | James Stuart, M.D.....                  | 150      |
| Robert McKay, Esq.....           | 500      | A. T. Paterson, Esq.....                | 100      |
| John Hope, Esq.....              | 500      | H. W. Thornton, M.D. (New               |          |
| Alex. Urquhart, Esq.....         | 500      | Richmond, Q.).....                      | 100      |
| E. K. & G. A. Greene, Esqrs..... | 500      | M. E. David, Esq.....                   | 100      |
| R. A. Smith, Esq.....            | 500      | C. B. Harvey, M.D. (Yale, B.C.) ..      | 100      |
| George Hague, Esq.....           | 500      | D. Cluness, M.D. (Nanaimo, B.C.) ..     | 100      |
| J. K. Ward, Esq.....             | 500      | W. Kinlock, Esq .....                   | 100      |
| Warden King, Esq.....            | 500      | Hua & Rickardson.....                   | 100      |
| John Stirling, Esq .....         | 500      | Mrs. Cuthbert (N. Richmond, Q.) ..      | 100      |
| John Rankin, Esq.....            | 500      | J. M. Drake, M. D .....                 | 100      |
| Messrs. Cantlie, Ryan & Co.....  | 500      | Hugh Patton, Esq.....                   | 100      |
| Robert Reford, Esq.....          | 500      | R. T. Goufey, M.D. ....                 | 100      |
| Messrs. J. & W. Ogilvie .....    | 500      | T. A. Rodger, M.D.....                  | 100      |
| Randolph Hersey, Esq.....        | 500      | W. A. Dyer, Esq .....                   | 100      |
| John A. Pillow, Esq.....         | 500      | George Wood, M.D (Faribault,            |          |
| S. Carsley, Esq .....            | 500      | Minn.).....                             | 100      |
| Forward.....                     | \$40,000 | Forward.....                            | \$52,000 |

| Forward.....                        | \$52,290 | Forward.....                     | \$52,880 |
|-------------------------------------|----------|----------------------------------|----------|
| A. A. Browne, M.D.....              | 100      | J. H. McBean, M.D.....           | 15       |
| George Wilkins, M.D.....            | 100      | J. C. Rattray, M.D. (Cobden, O.) | 10       |
| R. L. McDonnell, M.D.....           | 100      | E. H. Howard, M.D. (Lachine)...  | 10       |
| Joseph Workman, M.D. (Toronto)      | 50       | J. W. Oliver, M.D. (Clifton, O.) | 10       |
| Hon. Sir A. T. Galt.....            | 50       | D. A. McDougall, M.D. (Ottawa,   |          |
| Henry Lunam, B. A., M. D.           |          | O.).....                         | 10       |
| (Campbellton, N.B.).....            | 50       | A. Pousette, M.D. (Sarnia, O.).. | 10       |
| R. J. B. Howard, M.D.....           | 25       | A. Ruttan, M.D. (Napanee, O.)..  | 10       |
| T. J. Alloway, M.D.....             | 25       | Jas. Gunn, M.D. (Durham, O.)..   | 10       |
| Louis T. Marceau, M.D. (Napier-     |          | J. McDiarmid, M.D. (Hensall, O.) | 5        |
| ville, Q.).....                     | 25       | W. J. Derby, M.D. (Rockland, O.) | 5        |
| Griffith Evans, M.D. (Vet. Dept.    |          | J. Gillies, M.D. (Teeswater, O.) | 5        |
| Army).....                          | 25       | J. B. Benson, M.D. (Chatham,     |          |
| J. J. Farley, M.D. (Belleville).... | 25       | N.B.).....                       | 5        |
| Henry R. Gray, Esq.....             | 25       | L. A. Fortier, M.D. (St. David,  |          |
| J. E. Brouse, M.D. (Prescott).....  | 20       | Q.).....                         | 5        |
| R. F. Rinfret (Quebec).....         | 20       | J. A. McArthur, M.D. (Fort       |          |
| Robt. Howard, M.D. (St. Johns)...   | 20       | Elgin, O.).....                  | 5        |
| Drs. J & D. J. McIntosh (Vank-      |          | John Campbell, M.D. (Seaforth,   |          |
| leek Hill).....                     | 20       | O.).....                         | 5        |
| Forward.....                        | \$52,880 | Total.....                       | \$53,000 |

## 3. ENDOWED CHAIRS, ETC.

|                                                                                                                                                                                                           |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Sir Donald A. Smith, Chair of Pathology in the Faculty of Medicine, endowed in 1893 by the Hon. Sir Donald A. Smith with the sum of ....                                                                  | \$50,000 |
| Sir Donald A. Smith, Department of Hygiene in the Faculty of Medicine, endowed in 1893 by the Hon. Sir D. A. Smith with the sum of.....                                                                   | 50,000   |
| MRS. MARY DOW BEQUEST—Bequest by the will of the late Mrs. Mary Dow for the Faculty of Medicine, 1893, \$10,000, less Government Tax of 10 per cent.....                                                  | 9,000    |
| JOHN H. R. MOLSON DONATION—Donation by J. H. R. Molson, Esq., to the Faculty of Medicine of McGill University, \$25,000 for the purchase of land, and \$35,000 for additional building and equipment..... | 60,000   |
| WALTER DRAKE, Esq., for benefit of Chair of Physiology, interest annually on \$10,000, session 1891 to 1892-93.....                                                                                       | 500      |
| Dr. Robert Craik Fund—                                                                                                                                                                                    |          |
| Mrs JOHN McDUGALL, toward formation of .....                                                                                                                                                              | 1,000    |
| JANE F. LEARMONT, bequest do .....                                                                                                                                                                        | 3,000    |
|                                                                                                                                                                                                           | 4,000    |

## 4. MEDALS AND SCHOLARSHIPS.

In 1865 the "Holmes Gold Medal" was founded by the Faculty of Medicine as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine, to be given to the best student in the graduating class in Medicine, who should undergo a special examination in all the branches, whether Primary or Final.

In 1878 the "Sutherland Gold Medal" was founded by Mrs. Sutherland of Montreal, in memory of her late husband, Prof. William Sutherland, M.D., for competition in the classes of Theoretical and Practical Chemistry in the Faculty of Medicine, together with creditable standing in the Primary Examinations.

THE DAVID MORRICE SCHOLARSHIP—in the subject of Institutes of Medicine, in the Faculty of Medicine—founded in 1881—value \$100. (Terminated in 1883.)



## 5. LIBRARY, MUSEUM AND APPARATUS.

*For the fittings of the Library and Museum of the Faculty of Medicine, 1872.*

|                                |        |                           |         |
|--------------------------------|--------|---------------------------|---------|
| G. W. Campbell, A.M., M.D..... | \$1200 | Forward.....              | \$2,000 |
| W. E. Scott, M.D.....          | 200    | Robert Craik, M.D.....    | 200     |
| Wm. Wright, M.D.....           | 200    | Geo. E. Fenwick, M.D..... | 200     |
| Robert P. Howard, M.D.....     | 200    | Joseph M. Drake, M.D..... | 200     |
| Duncan C. MacCallum, M.D.....  | 200    | Geo. Ross, M.A., M.D..... | 50      |
| Forward.....                   | \$2000 | Total.....                | \$2,650 |

|                                                                                           |   |                                                                                                              |   |        |
|-------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------|---|--------|
| The Professors and Lecturers in the<br>Summer Sessions of the Faculty<br>of Medicine..... | { | Donation to Apparatus, Museum,<br>Library, etc., of the Medical<br>Faculty, 1887, \$1,182; 1888,<br>\$1,023. | { | \$2215 |
|-------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------|---|--------|

*For Physiological Laboratory of Faculty of Medicine, 1879.*

|                                |       |                   |       |
|--------------------------------|-------|-------------------|-------|
| Dr. Campbell .....             | \$100 | Forward .....     | \$700 |
| Dr. Howard.....                | 100   | Dr. Ross .....    | 50    |
| Dr. Craik .....                | 100   | Dr. Roddick.....  | 50    |
| Dr. MacCallum.....             | 100   | Dr. Buller.....   | 50    |
| Dr. Drake.....                 | 100   | Dr. Gardner ..... | 50    |
| Dr. Godfrey .....              | 100   | Dr. Osler .....   | 50    |
| Dr. McEachran, F.R.C.V.S. .... | 100   | Total .....       | \$950 |
| Forward.....                   | \$700 |                   |       |

*Cameron Obstetrical Collections.*

|                         |          |
|-------------------------|----------|
| Dr. J. C. Cameron ..... | \$10,000 |
|-------------------------|----------|

## 6. MISCELLANEOUS.

|                                                                      |       |
|----------------------------------------------------------------------|-------|
| Anonymous Donor toward Expenses of Pathology for Session 1892-3..... | \$500 |
|----------------------------------------------------------------------|-------|

## IV. ENDOWMENTS AND SUBSCRIPTIONS FOR THE FACULTY OF LAW.

## 1. ENDOWED CHAIRS, ETC.

- THE GALE CHAIR, in the Faculty of Law, endowed by the late Mrs. Andrew Stuart (*née* Agnes Logan Gale) of Montreal, in memory of her father, the late Honorable Mr Justice Gale,—\$25,000.
- THE WILLIAM C. McDONALD Faculty of Law Endowment, founded by William C. McDonald, Esq. (1890)—\$150,000.
- W. C. McDONALD, Esq., remodeling part of East Wing, for Class Rooms, Lecture Rooms, etc., for Law Faculty in 1895.

## 2. MEDAL.

In 1865 the "Elizabeth Torrance Gold Medal" was founded and endowed by John Torrance, Esq., of St. Antoine Hall, Montreal, in memory of the late Mrs. John Torrance, for the best student in the graduating class in Law, and more especially for the highest proficiency in Roman Law.



## V. LIBRARY, MUSEUM AND APPARATUS.

### 1. SPECIAL COLLECTIONS OF BOOKS PRESENTED TO THE LIBRARY.

1. The Peter Redpath Collection of Historical Books, presented by Peter Redpath, Esq., of Montreal, 3,500 Volumes, with subsequent additions.
2. The Robson Collection of works in Archaeology and General Literature, presented by Dr. John Robson, of Warrington, England, 3436 Volumes.
3. The Charles Alexander Collection of Classical Works, presented by C. Alexander, Esq., of Montreal, 221 Volumes.
4. Frederick Griffin, Esq., Q.C., Collection of Books, being the whole of his Library, bequeathed by his will, 2695 Volumes.
5. The Hon. Mr. Justice Mackay, collection of Books, being the whole of his Library, 2007 Volumes.
6. The "T. D. King Shakespeare Collection," presented by the Hon. Sir Donald A. Smith and W. C. McDonald, Esq., of Montreal, being 214 Volumes.

### 2. ENDOWMENTS, ETC., TO LIBRARY.

|                                                                                  |         |                                                                                                                                                          |         |
|----------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Hon. F. W. Torrance, for Endowment of Mental and Moral Philosophy Book Fund..... | \$1,000 | Forward.....                                                                                                                                             | \$6,000 |
| Mrs. Redpath, for the Endowment of the Wm. Wood Redpath Library Fund.....        | 1,000   | A friend, by the Hon. F. W. Torrance.....                                                                                                                | 400     |
| Wm. Molson, Esq., for Endowment of a Library Fund.....                           | 4,000   | Hugh S. McLennan, Library Endowment, a gift from Estate late Hugh S. McLennan to the Library of McGill College, the income to be applied to binding..... | 250     |
| Forward.....                                                                     | \$6,000 | Total.....                                                                                                                                               | \$6,650 |

### 3. SUBSCRIPTIONS, ETC., TO LIBRARY.

|                                                                              |         |                                                                                    |          |
|------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------|----------|
| John Thorburn, for purchase of Books.....                                    | \$ 90   | Forward.....                                                                       | \$1,199  |
| Andrew Drummond, do for Applied Science.....                                 | 25      | Hon. Sir Donald A. Smith, for purchase of books from the R. W. Boodle Library..... | 200      |
| The Graduates in Arts and Applied Science of 1885 for purchase of Books..... | 31      | Ottawa Valley Graduates' Society, for binding books in the University Library..... | 25       |
| Do of 1886.....                                                              | 28      | Peter Redpath, Esq., in aid of the new catalogue of the Library (1892).....        | 500      |
| The late R. A. Ramsay, Esq., Bequest for purchase of books.....              | 1000    | Miss Elizabeth Binmore, M.A., for the purchase of Botanical Books.....             | 15       |
| Andrew Drummond, Esq., to Library Fund of Faculty of Applied Science.....    | 25      | Mrs. Peter Redpath for maintenance of Library for 2 years...                       | 10,000   |
| Forward.....                                                                 | \$1,199 | Total.....                                                                         | \$11 939 |

### 4. SPECIAL COLLECTIONS PRESENTED TO THE MUSEUM.

1. The Holmes Herbarium, presented by the late Andrew F. Holmes, M.D.
2. The Carpenter Collections of Shells, presented by the late P. P. Carpenter, Ph.D.
3. The collection of Casts of Ivory Carvings issued by the Arundel Society, presented by Henry Chapman, Esq.
4. The McCulloch Collection of Birds and Mammals, collected by the late Dr. M. McCulloch, of Montreal, and presented by his heirs.
5. The Logan Memorial Collections of Specimens in Geology and Natural History, presented by the heirs of the late Sir W. E. Logan, LL.D., F.R.S.
6. The Dawson Collection in Geology and Palaeontology, being the Private Collections of Principal Dawson, presented by him to the Museum.

7. The Bowles Collection of Lepidoptera, presented by W. C. McDonald, Esq., and J. H. Burland, Esq.  
 8. R. Morton Middleton, jr., London, Eng., Collection of Plants.  
 (See also "List of Donations to the Library and Museum," printed annually in the Calendar and Report of the Museum.)

#### 5. ENDOWMENTS FOR THE MUSEUM.

Wm. Molson, Esq., for the Endowment of a Museum Fund.....\$2000

#### 6. SUBSCRIPTIONS, ETC., FOR THE MUSEUM.

|                                                                                               |          |                                                                                           |          |
|-----------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------|----------|
| T. J. Claxton, Esq., for purchase of Specimens for Museum.....\$                              | 250      | Forward .....                                                                             | \$15,483 |
| Peter Redpath, Esq., for Museum expenses, \$1000 per annum from 1882 to 1893 .....            | 12,000   | A Lady, for Museum Expenses from 1882 to 1894 .....                                       | 7000     |
| Mrs. Peter Redpath, for Museum expenses, 1894 and 1895 .....                                  | 2500     | A friend, for the purchase of specimens for the Museum.....                               | 4300     |
| Mrs. H. G. Frothingham, for the arrangement of Dr. Carpenter's Collection of Mazatlan shells. | 233      | John H. R. Molson, for purchase of book on "Butterflies of Eastern U.S. and Canada" ..... | 50       |
| Peter Redpath, Esq., for improvements to Museum.....                                          | 1000     | Hon. Sir Donald A. Smith, for mounting skin and skeleton of Musk Ox.....                  | 150      |
| Forward.....                                                                                  | \$15,483 | Total.....                                                                                | \$26,983 |

#### 7. ENDOWMENTS FOR APPARATUS.

The Local Committee of the British Association for the Advancement of Science, to found the British Association Apparatus Fund in the Faculties of Arts and Applied Science, in commemoration of the meeting of the Association in Montreal in 1884..... \$1500

#### 8. SUBSCRIPTIONS, ETC., FOR APPARATUS.

|                                                                                                                        |         |                                                                                                                        |         |
|------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------|---------|
| William Molson, Esq., Philosophical Apparatus, 1867. ....                                                              | 500     | Forward.....                                                                                                           | \$ 4917 |
| John H. R. Molson, Esq., for the same.....                                                                             | 500     | J. Livesey, Esq., through Dr. Harrington, for the same.....                                                            | 50      |
| Peter Redpath, Esq., for the same.....                                                                                 | 500     | Geo. Stephen, Esq., for the same                                                                                       | 50      |
| George Moffatt, Esq., for the same.....                                                                                | 250     | Chas. Gibb, B.A., donation for Apparatus in Applied Science.                                                           | 50      |
| Andrew Robertson, Esq., for the same.....                                                                              | 100     | The Local Committee for the reception (1881) of American Society of Civil Engineers.....                               |         |
| John Frothingham, Esq., for the same.....                                                                              | 100     | { For the purchase of appli-<br>ances for the department of<br>Civil Engineering in Faculty<br>of Applied Science..... | 475     |
| David Torrance, Esq., for the same.....                                                                                | 100     | Capt. Adams, Chemical Apparatus.....                                                                                   | 10      |
| A Telescope and Astronomical Instruments, the Gift of Chas. T. Blackman, Esq., of Montreal, and called after his name. |         | J. H. Burland, B.A.Sc., Chemical Apparatus .....                                                                       | 25      |
| Thos. J. Barron, B.A., for Philosophical Apparatus .....                                                               | 50      | Mrs. Redpath, Storage battery..                                                                                        | 400     |
| J. H. R. Molson, Esq., Dynamo, Gas Engine and fixtures .....                                                           | 1792    | W. C. McDonald, Esq., fittings of upper Chemical Laboratory                                                            | 2075    |
| A lady, for the purchase of Mining Models .....                                                                        | 1000    | A. J. Lawson, a Dynamo.                                                                                                |         |
| Thos. McDougall, Esq., for the same .....                                                                              | 25      | Benjamin Dawson, 3 Microscopes.                                                                                        |         |
| Forward.....                                                                                                           | \$4,917 | Sir Donald A. Smith, for appliances in Zoology in special interest of Donalds Classes....                              | 100     |
|                                                                                                                        |         | Total.....                                                                                                             | \$8152  |

## VI. SUBSCRIPTIONS FOR SPECIAL OBJECTS.

## 1. FOR A BUILDING FOR THE CARPENTER COLLECTION OF SHELLS.

1868.

|                                |        |                               |         |
|--------------------------------|--------|-------------------------------|---------|
| Peter Redpath, Esq.....        | \$ 500 | Forward .....                 | 1600    |
| William Molson, Esq.....       | 500    | Geo. H. Frothingham, Esq..... | 100     |
| Harrison Stephen, Esq.....     | 100    | Wm. Dow, Esq .....            | 100     |
| Robert J. Reekie, Esq.....     | 100    | Thos. Rimmer, Esq .....       | 100     |
| John H. R. Molson, Esq.....    | 100    | Andrew Robertson, Esq .....   | 100     |
| Sir Wm. E. Logan, Esq., F.R.S. | 100    | Mrs. Redpath.....             | 100     |
| John Molson, Esq.....          | 100    | Benaiah Gibb, Esq.....        | 50      |
| Thos. Workman, Esq., M. P..... | 100    | Honorable John Rose.....      | 50      |
| Forward.....                   | \$1600 | Total.....                    | \$2,200 |

## 2. FOR THE ERECTION OF THE LODGE AND GATES.

|                               |         |                               |         |
|-------------------------------|---------|-------------------------------|---------|
| William Molson, Esq.....      | \$100   | Forward.....                  | 1100    |
| John H. R. Molson, Esq.....   | 100     | John Frothingham, Esq.....    | 100     |
| William Workman, Esq.....     | 100     | James A. Mathewson, Esq. .... | 100     |
| Joseph Tiffin, jun., Esq..... | 100     | Peter Redpath, Esq .....      | 100     |
| Thos. J. Claxton, Esq.....    | 100     | G. H. Frothingham, Esq.....   | 100     |
| James Linton, Esq.....        | 100     | G. D. Ferrier, Esq.....       | 100     |
| William McDougall, Esq.....   | 100     | Geo. W. Warner, Esq.....      | 100     |
| Charles J. Brydges, Esq.....  | 100     | John Smith, Esq.....          | 100     |
| George A. Drummond, Esq.....  | 100     | Charles Alexander, Esq....    | 100     |
| Thomas Rimmer, Esq.....       | 100     | J. Evans, Esq.....            | 100     |
| William Dow, Esq.....         | 100     | Henry Lyman, Esq.....         | 100     |
| Forward.....                  | \$1,100 | Total.....                    | \$2,100 |

## 3. FOUNDER'S TOMB.

|                                                                                                                  |       |
|------------------------------------------------------------------------------------------------------------------|-------|
| R. A. Ramsay, M.A., B.C.L., to defray the expenses of re-erecting the tomb<br>of the late Hon. James McGill..... | \$150 |
|------------------------------------------------------------------------------------------------------------------|-------|

## 4. UNIVERSITY PORTRAITS AND BUSTS.

- Portrait of the Founder, presented by the late Thomas Blackwood, Esq.  
 Portrait of William Molson, Esq., presented to the University.  
 Bust of William Molson, Esq., by Marshall Wood, presented by Graduates of the University.  
 Portrait of Peter Redpath, Esq., painted by Sydney Hodges, presented by Citizens of Montreal.  
 Portrait of Rev. Dr. Leach, by Wyatt Eaton, presented by Friends and Graduates of the University.  
 Portrait of Sir William Dawson, by Wyatt Eaton, presented by Friends and Graduates of the University.  
 Portrait of Hon. James Ferrier, by Robert Harris, presented by Friends and Graduates of the University.  
 Portrait of Dr. William Robertson, founder of the Medical Faculty, presented in loving remembrance by his family and descendants.  
 Bust of Peter Redpath, Esq., by Reynolds Stephens, presented by Mr. Redpath's personal friends in England.

## 5. ENDOWMENT, HELD IN TRUST BY THE BOARD OF ROYAL INSTITUTION.

The "Mannah Willard Lyman Memorial Fund," contributed by subscription of former pupils of Miss Lyman, and invested as a permanent endowment to furnish annually a Scholarship or Prizes in a "College for Women" affiliated to the University, or in classes for the Higher Education of Women, approved by the University. The amount of the fund is at present \$1,100.

## VII. THE GRADUATES' FUNDS.

### 1. THE FUND FOR ENDOWMENT OF THE LIBRARY.

The Graduates' Society of the University, in 1876, passed the following Resolution:—

*Resolved:—*"That the members and graduates be invited to subscribe to a fund for the endowment of the Libraries of the University; said fund to be invested and the proceeds applied under the supervision of the Council of the Society in annual additions to the Libraries; an equitable division of said proceeds to be made by the Council between the University Library and those of the Professional Faculties."

In terms thereof subscriptions have been paid in to the Graduates' Society, amounting in all to \$3,129; the interest on which is annually expended in the purchase of books for the several libraries under the direction of a special committee appointed for that purpose.

### 2. THE DAWSON FELLOWSHIP FOUNDATION.

The Graduates' Society of the University, in 1880, and in commemoration of the completion by Dr. Dawson of his twenty-fifth year as Principal, resolved to raise, with the assistance of their friends, a fund towards the Endowment of the Fellowship, under the above name.

Details of the scheme can be had from the Treasurer, Francis Topp, B.A., B.C.L. The following subscriptions have been announced to date, May 1st, 1889. They are payable in one sum, in instalments, without interest or with interest till payment of capital, as subscribers have elected.

*Alphabetically arranged.*

|                                    |       |                                  |         |
|------------------------------------|-------|----------------------------------|---------|
| Abbott, H., B.C.L.....             | \$ 60 | Lyman, H. H., M.A.....           | \$ 100  |
| Archibald, H., B.A.Sc.....         | 20    | Lyman, A. C., M.A., B.C.L.....   | 50      |
| Bethune, M. B., M.A., B.C.L.....   | 50    | McCormick, D., B.C.L.....        | 100     |
| Carter, C. B., B.C.L.....          | 100   | McGibbon, R. D., B.A., B.C.L.... | 100     |
| Cruikshank, W. G., B.C.L.....      | 100   | McGoun, A., jun., M.A., B.C.L .  | 50      |
| Dawson, W. B., M.A., Ma.E.....     | 58    | McLennan, J. S., B.A.....        | 100     |
| Dougall, J. R., M.A.....           | 250   | Ramsay, R. A., M.A., B.C.L.....  | 50      |
| Gibb C., B.A.....                  | 100   | Spencer, J. W., B.A.Sc., Ph.D... | 50      |
| Hall, Rev. Wm., M.A....            | 100   | Stephen, C. H., B.C.L.....       | 100     |
| Hall, J. S., jun., B.A., B.C.L.... | 100   | Stewart, D. A., B.A.Sc.....      | 20      |
| Harrington, B. J., B.A., Ph.D...   | 50    | Stewart, J., M.D.....            | 60      |
| Hutchinson, M., B.C.L.....         | 400   | Tait, M. M., B.C.L.....          | 100     |
| Kirby, J., LL.D., D.C.L.....       | 150   | Taylor, A. D., B.A., B.C.L.....  | 100     |
| Krans, Rev. E. H., M.A., LL.D..    | 100   | Trenholme, N. W., M.A., D.C.L..  | 400     |
| Leet, S. P., B.C.L.....            | 100   |                                  |         |
| Lighthall, W. D., M.A., B.C.L...   | 100   |                                  |         |
|                                    |       | Total to date.....               | \$3,010 |

McGILL UNIVERSITY.  
MONTREAL.

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ENTRANCE, EXHIBITION AND SCHOLARSHIP  
EXAMINATIONS,

SEPTEMBER, 1895.

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## FACULTY OF ARTS.

### GREEK.

#### MATRICULATION—FIRST YEAR.

TUESDAY, SEPT. 17TH, 1895 :—9 TO 12 A.M.

*Examiner*,.....J. L. DAY, M.A., M.D.

#### I. GRAMMAR.

1. Decline in the singular *ὁ βασιλεύς εὐδαίμων*, and *ἡ βασίλεια χαρίεσσα*; and in the plural *γυνή, δόρυ*, and *οὗς*. Give stems of each.

2. (1) Compare: *μέσος, σώφρων, ἡδύς, καλός, φίλος, μέγας*. (2) Write the ordinal numerals from one to ten.

3. Mention the principal uses of the Genitive case. Illustrate.

4. Explain the formation of the following words: *ἔστησαν, διδῶμεν, ἐτίθην, λελειμμαι*. What is meant by double augment? Give instances of this.

5. Define: cognate accusative, genitive absolute, attraction, gnomic aorist, reduplication.

6. Inflect *τιμάω* and *φιλέω* (contracted forms) in the imperf. indic. pass., and give first person sing. 2nd aorist of all active moods of *δίδωμι*.

7. Give principal parts of; *μανθάνω, λανθάνω, λείπω, μιμνήσκω, οἴχομαι, πλήσσω, πήγνυμι, τιτρώσκω*.

## II. XENOPHON.

## 8. Translate : Anabasis I.

Ἀρίστιππος δὲ ὁ Θετταλὸς ξένος ὃν ἐτύγγαεν αὐτῷ, καὶ πιεζόμενος ὑπὸ τῶν οἴκοι ἀντιστασιωτῶν ἔρχεται πρὸς τὸν Κῦρον καὶ αἰτεῖ αὐτὸν εἰς δισχιλίους ξένους καὶ τριῶν μηνῶν μισθόν, ὡς οὕτω περιγενόμενος ἂν τῶν ἀντιστασιωτῶν. ὁ δὲ Κῦρος δίδωσιν αὐτῷ εἰς τετρακισχιλίους καὶ ἑξ μηνῶν μισθόν, καὶ δέεται αὐτοῦ μὴ πρόσθεν καταλῦσαι πρὸς τοὺς ἀντιστασιώτας πρὶν ἂν αὐτῷ συμβουλευσῇται, οὕτῳ δὲ αὐτὸ ἐν Θετταλίᾳ ἐλάνθανεν αὐτῷ τρεφόμενον στράτευμα.

Ταῦτα δὲ λέγων θορύβου ἤκουσε διὰ τῶν τάξεων ἰόντος, καὶ ἤρετο τίς ὁ θόρυβος εἴη. ὁ δὲ Κλέαρχος εἶπεν ὅτι τὸ σύνθημα παρέρχεται δεύτερον ἤδη. καὶ ὃς ἐθαύμασε τίς παραγγελλεῖ καὶ ἤρετο ὅ τι εἴη τὸ σύνθημα. ὁ δ' ἀπεκρίνατο, ΖΕΤΣ ΣΩΤΗΡ ΚΑΙ ΝΙΚΗ.

9. (α) Explain the construction of ξένος, μισθόν, ἀντιστασιωτῶν.

(β) What constructions has πρὶν?

(γ) Where is Thessaly?

(δ) To what mood and tense do these belong: ἐτύγγαεν, ἤκσ-, ἤρετο, ἐθαύμασε?

(ε) How would ὅτι εἴη τὸ σύνθημα occur in *Oratio recta*?

10. Outline the expedition of the Ten Thousand as narrated by Xenophon.

## FIRST YEAR ENTRANCE.

## LATIN.

TUESDAY, SEPTEMBER 17TH, 1895 :—AFTERNOON, 2 TO 5.

*Examiner*,..... A. JUDSON EATON, M.A., Ph.D.

NOTE.—In answering questions 1 to 6, candidates are requested to mark, by the usual sign, all *long vowels*.

## I. LATIN GRAMMAR.

1. Decline *index, dies, opus, deus; idem*.
2. Give the Genitive Singular of *filius, ingenium*; the Vocative Singular of *meus*; and the Locative of *Roma, Philippi, Carthago*.
3. Decline the adjective *niger* in the singular; *tristis* in the plural.
4. Name the adjectives that take—*us* in the genitive singular.
5. Compare the adjectives *brevis, facilis, malivolus, magnus*; the adverb *digne*.
6. How are the four conjugations distinguished? Inflect *sum* in the Imperfect Subjunctive; *amo* in the Fut. Indic. Act; *rego* in the Pres. Subjunct. Act; and *audio* in the Perf. Indic. and Pres. Imper. Act.
7. Give the principal parts of *augeo, cresco, tego, tollo, oblitiscor*.
8. What are *Final* and *Consecutive Clauses*? By what particles are they introduced? Give two examples of such Clauses.
9. Translate into Latin :—(1) five, eight, eleven, fifteen, twenty-two, sixty; fourth, ninth. (2) Who is more eloquent (*eloquentior*) than Cicero? (3) The farmer ploughs (*aro*) his field with great care (*cura*). (4) Is it written? does he send? will he go? (5) These mountains are very high.
10. Translate into Latin :—(1) The bravest of all were the Belgæ, who were the farthest away from the Roman Province. (2) Orgetorix prevailed on the Helvetii to go forth from their borders. (3) Peace and friendship were established with the neighboring States. (4) Informers disclosed this conspiracy to the Helvetii. (5) By burning all their dwellings they took away the hope of return.

## II. CAESAR AND VIRGIL.

## 1. Translate :

*Hoc proelio facto, reliquas copias Helvetiorum ut consequi posset, pontem in Arare faciendum curat, atque ita exercitum transducit. Helvetii, repentino eius adventu commoti, cum id, quod ipsi diebus viginti aeger-*

rime confecerant, ut flumen transirent, uno illum die fecisse intelligerent, legatos ad eum mittunt: Cuius legationis Divico princeps fuit, qui bello Cassiano dux Helvetiorum fuerat. Is ita cum Caesare agit: "Si pacem Populus Romanus cum Helvetiis faceret, in eam partem ituros, atque ibi futuros Helvetios ubi eos Caesar constituisset atque esse voluisset: sin bello persequi perseveraret, reminisceretur et veteris incommodi Populi Romani et pristinae virtutis Helvetiorum."—CAESAR, Bk. I.

2. Explain the grammatical construction of the words and phrases in italics.

3. Write out in the form of direct narration from *Si pacem* to *virtutis Helvetiorum*.

4. Translate:

Instructo exercitu magis ut loci natura deiectusque collis et necessitas temporis quam ut rei militaris ratio atque ordo postulabat, diversis legionibus aliae alia in parte hostibus resisterent, sepiusque densissimis, ut ante demonstravimus, interiectis prospectus impediretur, neque certa subsidia collocari, neque quid in quaque parte opus esset provideri, neque ab uno omnia imperia administrari poterant. Itaque in tanta rerum iniquitate fortunae quoque eventus varii sequebantur.—CAESAR, Bk. II.

5. Derive *impedio*, *collocari*, *iniquitate*, *cogo*, *detrimentum*.

6. Translate:

Defessi Aeneadae, quae proxima litora, cursu contendunt petere, et Libyae vertuntur ad oras. Est in secessu longo locus; insula portum efficit obiectu laterum, quibus omnis ab alto frangitur inque sinus scindit sese unda reductos. Hinc atque hinc vastae rupes geminique minantur in caelum scopuli, quorum sub vertice late aequora tuta silent; tum silvis scena coruscis desuper horrentique atrum nemus imminet umbra. Fronte sub adversa scopulis pendentibus antrum; intus aquae dulces, vivoque sedilia saxo, nymphae domus. Hic fessas non vincula naves ulla tenent; unco non alligat ancora morsu. Huc septem Aeneas collectis navibus omni ex numero subit; ac magno telluris amore egressi optata petiuntur Troes harena, et sale tabentis artus in litore ponunt.—VIRGIL, Bk. I., 157-173

7. (a) Write out, dividing into feet and marking the quantity of every syllable, and the principal caesura of each verse, the first four lines. (b) Give the principal parts of *frangitur*, *scindit*, *minantur*, *tenent*, *collectis*. (c) Account for the following ablatives: *cursu*, *obiectu*, *silvis*, *azo*, *morsu*, *navibus*, *sale*.



MATHEMATICS.

WEDNESDAY, SEPT. 18TH, 1895:—MORNING, 9 TO 12.

*Examiner*, ..... A. JOHNSON, M.A., LL.D.  
*Assistant Examiner*, ..... H. M. TORY, B.A.

1. Describe a parallelogram that shall be equal to a given triangle, and have one of its angles equal to a given angle.

2. Parallelograms upon equal bases and between the same parallels are equal.

3. If a straight line be divided into two equal and also into two unequal parts, the rectangle contained by the two unequal parts together with the square on the line between the points of section shall be equal to the square on half the line.

4. Divide a straight line into two parts, so that the rectangle contained by the whole line and one part shall be equal to the square on the other.

5. Prove that the straight line which bisects any chord of a circle perpendicularly passes through the centre of the circle.

6. Equal chords in a circle are equidistant from the centre.

7. Find the factors of (1)  $9x^2 + 9x + 2$

$$(2) 4(ab - cd)^2 - (a^2 + b^2 - c^2 - d^2)^2$$

$$(3) x^3y^3 - 512.$$

8. Simplify 
$$\frac{\frac{4}{x-1} + \frac{x-1}{x}}{\frac{1}{x-1} - \frac{1}{x}}$$

9. Solve the equations

$$(a) \frac{1}{x-a} + \frac{2}{x-b} = \frac{3}{x-c}$$

$$(b) 4x^2 - 25x - 21 = 0$$

$$(c) \frac{4}{x} - \frac{3}{y} = 5$$

$$\frac{6}{x} + \frac{3}{y} = 10$$

10. The sum of  $\frac{\frac{2}{3} \text{ of } \frac{3}{4}}{\frac{1}{2}}$  and  $\frac{\frac{3}{5} \text{ of } \frac{5}{6}}{\frac{2}{9} \text{ of } 4\frac{1}{2}}$  is equal to how many times their difference.

11. The whole time occupied by a train 150 yards long in crossing a bridge at the rate of 25 miles an hour is 20 seconds; find the length of the bridge.

12. Find the compound interest on \$1500 for 3 years at 5 per cent.

## FACULTIES OF ARTS AND APPLIED SCIENCE.

### ENGLISH HISTORY AND ESSAY.

(N.B.—Write the History and the Essay in different books, and your name [in full] and Faculty on the outside of each.)

THURSDAY, SEPT. 19TH :—10.30 TO 12.30 A.M.

Examiners, ..... { CHAS. W. COLBY, PH.D.  
PAUL T. LAFLEUR, M.A.

### FIRST YEAR.

(Answer *any three* of the following questions :)

1. Describe the steps by which English political freedom was won, 1200-1650.

2. What foreign possessions had England in 1170, 1360, 1763 ?

3. Write a short essay on the condition of Roman Catholicism in England, 1535-1688.

4. What dynastic title had the following sovereigns: Stephen, Henry VII., James I., George I. ?

5. Make notes on Constitutions of Clarendon, Statute of Mortmain, Self-denying Ordinance, repeal of the Test and Corporation Acts, repeal of the Corn Laws.

### SECOND YEAR.

(Answer the *last three* questions of the First Year Set.)

### ESSAY.

### FIRST YEAR.

Write an essay of at least two pages on *any one* of the following subjects:—

- A. Prevention of cruelty to animals.
- B. The best method for saving time.
- C. A great disappointment.

## SECOND YEAR.

## ENGLISH COMPOSITION AND ESSAY.

1. Contrast the *loose* and the *periodic* structure of the sentence. Give examples of both.

2. Give headings (for chapters or paragraphs) which might serve as divisions for the essay-subject of "Civilization."

3. Explain the exact meaning of the word *slang*. Discuss the question of the use of slang—*pro* and *contra*.

4. Give two examples of each of the following: change of meaning in words, obsolete words, new-fangled words, hybrid words, words in common use incorrectly applied.

5. Write an essay of at least two pages on any *one* of the following subjects:—

A. Oratory.

B. Maritime Supremacy.

C. A famous prose author.

## FACULTIES OF ARTS AND APPLIED SCIENCE.

## FIRST YEAR.

ENGLISH GRAMMAR AND ANALYSIS. (*N.B.—the Analysis is compulsory*).

THURSDAY, SEPTEMBER 19TH:—MORNING, 9 TO 10.30.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Give the plural of wife, cliff, court-martial, handful. Account for the sound of the final *s* in *books* and *tubs*. Write two words, each of which has two plurals of different meaning, one plural being English and the other Latin; give the meanings of the plurals. Write two words, each of which has two plurals, both plurals being English; give the meanings of the plurals.

2. Classify the following adjectives and pronouns: large, many, each, my, self, he, who. Give the inflections of those which are inflected.

3. Mention a weak intransitive and a strong transitive verb. Take the latter, and write the second person singular of the tenses of the Indicative mood in the passive voice. Distinguish between participles and adjectives. Parse *walking* in *walking-stick*.

4. Form a sentence showing the use of the conjunctive or relative adverb, and say what the adverb modifies. *John is taller than Charles: what is than?* Classify the following adverbs: badly, quite, no, thither.

5. Explain and illustrate the following terms: subjective complement, objective complement, compound subject, phrase.

6. Parse and analyse:

None judge so wrong as those who think amiss.

## SECOND YEAR.

(Candidates will answer questions 2, 3, 4, 5, 6 of the First Year paper, and also the following:)

7. Classify the consonants.

8. Make etymological and grammatical notes on foremost, ye, mine, negress, to wit, such.

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## EXAMEN D'ENTRÉE.

Le 20 SEPT., 1895 :—De 9 h. à midi.

*Eaminateur*, ..... M. INGRES.

Écrire en toutes lettres les nombres suivants : 21, 31, 35, 41, 64, 70, 71, 81, 98, 327, 1001.

Donner les temps primitifs de six des verbes suivants :

Aller, boire, courir, dire, écrire, faire, joindre, mourir, partir, savoir tenir, voir.

Traduire les passages suivants :

(a) Une des différences principales entre la République et la Monarchie, c'est que le remplacement du président vient à heure fixe; les chances de la vie et de la mort introduisent l'imprévu et l'inattendu dans la monarchie.

*Jules Simon.*

(b) Au siècle où nous vivons, l'horizon de l'art est bien élargi. Autrefois le poète disait : le public ; aujourd'hui le poète dit : le peuple.

*Victor Hugo.*

(c) Le président des Etats-Unis est le plus accessible de tous les citoyens de la grande République du Nouveau-Monde.

Trois fois par semaine, il descend au salon du rez-de-chaussée, à la Maison-Blanche, et pendant une heure serre la main à tous ceux à qui il

prend fantaisie d'entrer. Il n'est pas d'homme au monde qui serre autant de mains que le président des Etats-Unis. Vous entrez au salon de la Maison-Blanche à l'heure de la réception publique, comme vous entrez à l'église à l'heure de l'office. J'y ai vu des nègres, des femmes revenant du marché qui avaient laissé leurs paniers dans l'antichambre, des gens de toutes sortes et de toutes conditions. C'est le spectacle le plus démocratique que l'on puisse imaginer.

*Max O'Rell.*

(d) Ah ! mes beaux dimanches de la banlieue (suburbs) lorsque j'avais vingt ans ! Ils sont restés un de mes plus chers souvenirs. Depuis, j'ai connu d'autres joies, mais rien ne vaut d'être jeune et de se sentir lâché pour un jour dans la liberté des grands bois.

*Emile Zola.*

(e) Les bons livres sont des amis, a-t-on dit, et personne plus que moi n'est disposé à les qualifier ainsi ; j'ajouterais même que, parmi ces amis il en est vers lesquels on se sent attiré par des sympathies si nombreuses, qu'on serait tenté de voir en eux des parents dignes de tout notre respect et de tout notre amour.

*Silvestre de Sacy.*

Dater en toutes lettres.

## FIRST YEAR MATRICULATION EXAMINATION IN GERMAN.

### DONALDA DEPARTMENT.

SEPT. 17TH, 1895 :—MORNING, 9 TO 12.

*Examiner*, ..... L. R. GREGOR, B.A.

#### I. Translate into English :

(a) Da kam ihm so in die Gedanken, wie es doch seine Frau jetzt gut habe, die sitze daheim in einer kühlen Stube und lasse sich's wohl schmecken. Das ärgerte ihn ordentlich, und ohne dasz er's wuszte, sprach er so hin : " Ich wollte, die sässe daheim auf dem Sattel und könnte nicht herunter, statt dasz ich ihn da mit mir auf dem Rücken schleppe." Und als das letzte Wort aus seinem Munde kam, so war der Sattel von seinem Rücken verschwunden, und er merkte, dasz sein zweiter Wunsch auch in Erfüllung gegangen war. Da ward ihm erst recht heisz, und er fing an zu laufen und wollte sich daheim ganz einsam hinsetzen, um auf was Groszes für den letzten Wunsch nachzudenken.



(b) Ein Eichhorn hörte schon an seiner Mutter Brust  
 Den Wohlgeschmack der Mandeln preisen.  
 So wie der Sommer wuchs, so wuchs mit ihm die Lust,  
 Von dieser Fürstenkost zu speisen.  
 Die Zeit erschien ; die Frucht war abgepflückt.  
 Der kleine Lecker beiszt entzückt  
 Die bittere Schelfe durch und stampft und grinst und spucket.

(c) Die Hoffnung führt ihn ins Leben ein,  
 Sie umflattert den fröhlichen Knaben ;  
 Den Jüngling locket ihr Zauberschein,  
 Sie wird mit dem Greis nicht begraben :  
 Denn beschliesst er im Grabe den müden Lauf,  
 Noch am Grabe pflanzt er — die Hoffnung auf.

Es ist kein leerer, schmeichelnder Wahn,  
 Erzeugt im Gehirne des Thoren ;  
 Im Herzen kündet es laut sich an :  
 Zu was Besserm sind wir geboren !  
 Und was die innere Stimme spricht,  
 Das täuscht die hoffende Seele nicht.

2. Translate into German :

(a) You don't say much about your trip. (b) The banks will not be open until ten o'clock to-morrow. (c) The city of Berlin is the capital of the kingdom of Prussia. (d) I would have bought the book you showed me yesterday, if I had had money. (e) My sister did not sing at the concert, because she was hoarse. (f) The rain spoiled my journey to the country. (g) I was writing to my mother and Charles was writing to his when the postmaster brought us the letters. (h) Please tell me how this word is written in German. (i) The weather is coldest in Canada in January. (j) Schiller and Beethoven were Germans ; the former was a great poet, the latter a great musician. (k) The eldest son of the Queen of England was born on the ninth of November, one thousand eight hundred and forty one.

3. Give the Pres. Infinitive, first pers. sing. Imperf. Ind., and the Past Participle of the following verbs : bring, cut, suffer, arrive, shoot, enjoy, burn, bite, write, die, help, seem.

4. Mention three prepositions which govern the genitive ; nine which govern both the accusative and dative.

5. What is the gender of (*a*) towns, (*b*) villages, (*c*) precious stones, (*d*) diminutives, (*e*) seasons, (*f*) infinitives used as substantives, (*g*) fruits and flowers, (*h*) substantives in *-ung*.

6. Decline the pronoun (*der*) *meinige* in all genders and numbers.

7. Translate: (*a*) The house is built. (*b*) The house is being built. Explain carefully the use of the auxiliaries in these sentences.

8. Decline the third person singular and plural of the personal pronoun in all genders.

9. Give the genitive singular and nominative plural of the following substantives: Blatt, Blume, Thaler, Soldat, Brief, Haus, Stock, Garten, Fürst, Feder, Komet, Auge, Buchstabe, Ofen, Thüre, Schaf.

10. Decline the relative pronoun *welcher* in all genders and both numbers.

11. In what circumstances does the attributive adjective follow the weak declension?

12. Decline *the high tree* in the singular.

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#### SCHOLARSHIPS AND EXHIBITIONS.

#### FIRST YEAR.

#### GREEK.

HOMER:—*Iliad* IV. or VI.

XENOPHON:—*Anabasis* I. or V.

HOMER:—*Odyssey* VII. or XI.

TUESDAY. SEP. 17th :—9 TO 12 A.M.

*Examiner*,.....JOHN L. DAY, M.A., M.D.

NOTE.—Candidates will answer one question only from each of the groups A, B, C: sight translation for all.

1. (A) Translate, Homer, *Iliad* IV. (a) vss. 283-291, and (b) vss. 509-516.

(a) καὶ τοὺς μὲν γήθησεν ἰδὼν κρείων Ἀγαμεμνων,  
καὶ σφεας φωνήσας ἔπεα πτερόεντα προς ἡῦδα·  
    Αἴαντ', Ἀργείων ἡγήτορε χαλκοχιτώνων,  
σφῶϊ μὲν—οὐ γὰρ ἔοικ' ἀτρυνέμεν—οὔτι κελεύω·  
αὐτῷ γὰρ μάλα λαὸν ἀνώγετον ἱφί μάχεσθαι.  
αἶ γάρ, Ζεῦ τε πάτερ καὶ Ἀθηναίη καὶ Ἀπολλων,  
τοῖος πᾶσιν θυμὸς ἐνὶ στήθεσσι γένοιτο·  
τῷ κε τάχ' ἡμύσειε πόλις Πριάμοιο ἄνακτος,  
χερσὶν ὑφ' ἡμετέρησιν ἀλοῦσά τε περθομένη τε.

(b) Ορυσθ', ἱππόδαμοι Τρῶες, μηδ' εἴκετε χάρμης  
Ἀργείοις· ἐπεὶ οὔ σφι λίθος χρώς, οὐδὲ σίδηρος,  
χαλκὸν ἀνασχέσθαι ταμεσίχροα βαλλομένοισιν.  
οὐ μὰν οὐδ' Ἀχιλεὺς Θέτιδος παῖς ἡὔκόμοιο,  
μάρναται, ἀλλ' ἐπὶ νηυσὶ χόλον θυμαλγέα πέσσει.  
ὦς φάτ' ἀπὸ πτόλιος δεινὸς θεός· αὐτὰρ Ἀχαιοὺς  
ᾤρσε Διὸς θυγάτηρ, κυδίστη Τριτογένεια,  
ἐρχομένη καθ' ὅμιλον, ὅθι μεθιέντας ἵδοιτο.

Scan the first three lines of each extract, noting any peculiarities. Write a note on the Homeric use of the article. Explain the optative moods in ext. (a). Decline *ναῦς* in its Homeric forms. Etymology of *νήπια*, *ἐπὶ νῆν*, *μενεπτόλεμος*, *ἀλαλητός*. Mood and tense of *ἤλασε ἐξακρίσαιο*. Quote an instance of double augment from Bk. IV.

2. Translate Homer, *Iliad* VI.

See Second Year entrance paper, questions 10 and 11.

3. (B) Translate Xenophon, *Anabasis* I., iii. 14.

εἰς δὲ δὴ εἶπε, προσποιούμενος σπεύδειν ὥς τάχιστα πορεύεσθαι εἰς τὴν Ἑλλάδα, στρατηγούς μὲν εἰσθαι ἄλλους

ὡς τάχιστα, εἰ μὴ βούλεται Κλέαρχος ἀπάγειν. τὰ δ' ἐπιτήδεια ἀγοράζεσθαι· ἢ δ' ἀγορὰ ἦν ἐν τῷ γαργαρικῷ στρατευματι· καὶ συσκευάζεσθαι· ἐλθόντας δὲ Κῦρον αἰτεῖν πλοῖα, ὡς ἀποπλέοιεν· ἐὰν δὲ μὴ διδῶ ταῦτα, ἡγεμόνα αἰτεῖν Κῦρον, ὅστις διὰ φθλίας τῆς χώρας ἀπάξει· ἐὰν δὲ μηδὲ ἡγεμόνα διδῶ, συντάττεσθαι τὴν ταχίστην, πέμψαι δὲ καὶ προκατα ληψομένους τὰ ἄκρα ὅπως μὴ φθάσωσι μήτε Κῦρος μήτε οἱ Κίλικες καταλαβόντες, ὧν πολλοὺς καὶ πολλὰ χρήματα ἔχομεν ἀνηρπακότες.

What words depend directly on εἶπε? In what other mood might βούλεται (3), διδῶ (6), and φθάσωσι (9) be? Compare τάχιστα. What is the construction of ταχίστην (8) and καταλαβόντες (9)? When does οὐ instead of μή occur with the infinitive? State the general rules for the use of μή. Describe the circumstances under which this speech was made. What shews that it was not sincere?

#### 4. Translate Xenophon, Anabasis V., iv., 19-22.

τοῦ κακοῦ: what genitive? δίκην δεδῶκεναι. Give Latin equivalent. Distinguish ταῦτα and ταῦτά, and ὥστε with the indicative and ὅσπερ with the infinitive. What is the nature of the clause introduced by ὅπως, and of that following δηλώσητε? Derive εὐώνυμον, and show its formation.

#### 5. (C) Translate Homer, Odyssey VII., vss. 207-225.

Explain the construction of μοι, δέμας, ἰσώσαίμην. By what name is the optative κεν.....μυθησαίμην known? What force has περ with participles? ἐπλετο: mood and tense? What Homeric terminations occur in the infinitive mood instead of εἶν? Mention some of the Homeric uses of the infinitive.

#### . Translate Homer, Odyssey XI., vss. 605-611.

See the passage printed on the Second Year entrance paper, questions 7-9.

7. (D) Translate at sight :

ἐν δὲ τούτῳ προσάγουσι τῷ Κυρ τοὺς αἰχμαλώτους δεδεμένους, τοὺς δὲ τινὰς καὶ τετρωμένους ὥς δὲ εἶδεν, εὐθὺς λύειν μὲν ἐκέλευσε τοὺς δεδεμένους, τοὺς δὲ τετρωμένους ἰατροὺς καλέσας θεραπεύειν ἐκέλεισεν· ἔπειτα δὲ ἔλεξε τοῖς Χαλδαίοις, ὅτι ἤκει οὕτε ἀπολίσσαι ἐπιθυμῶν ἐκείνους οὐτε πολεμεῖν δεόμενος, ἀλλ' εἰρήνην βουχόμενος ποιῆσαι Ἀρμενίοις καὶ Χαλδαίοις. “πρὶν μὲν οὖν ἔχεσθαι τὰ ἄκρα οἷδ' ὅτι οὐκ ἐδέεσθε εἰρήνης· τὰ μὲν γὰρ ὑμέτερα ἀσφαλῶς εἶχε, τὰ δὲ τῶν Ἀρμενίων ἤγετε καὶ ἐφέρετε· νῦν δὲ ὁρᾶτε δῆ, ἐν οἷφ' ἐστέ· ἐγὼ οὖν ἀφίημι ὑμᾶς οἵκαδε τοὺς εἰλημένους, καὶ δίδωμι ὑμῖν σὺν τοῖς ἄλλοις Χαλδαίοις βουλευτασθαι, εἴτε βούλεσθε πολεμεῖν ἡμῖν, εἴτε φίλοι εἶναι. καὶ ἢν μὲν πόλεμον αἰρήσθε, μηκέτι ἤκετε δεῦρο ἄνευ ὅπλων, εἰ σωφρονεῖτε· ἢν δὲ εἰρήνης δοκῇτε δεῖσθαι, ἄνευ ὅπλων ἤκετε· ὥς δὲ καλῶς ἔξει τὰ ὑμέτερα, ἢν φίλοι γέννησθε ἐμοὶ μελήσει.” ἀκούσαντες δὲ οἱ Χαλδαῖοι ταῦτα, πολλὰ μὲν ἐπαινέσαντες, πολλὰ δὲ δεξιωσάμενοι ὥχοντο οἵκαδε.

FIRST YEAR EXHIBITIONS, 1895.

LATIN.

TUESDAY, SEPT. 17TH :—AFTERNOON, 2 TO 5.

Examiner, .... A. JUDSON EATON, M.A., PH.D.

1. Translate :—

At si hoc idem huic adulescenti optimo P. Sestio, si fortissimo viro M. Marcello dixissem, iam mihi consuli, hoc ipso in templo, senatus iure optimo vim et manus intulisset. De te autem, Catilina, cum quiescunt, probant: cum patiuntur, decernunt: cum tacent, clamant. Neque hi solum,—quorum tibi auctoritas est videlicet cara, vita vilissima,—sed etiam illi equites Romani, honestissimi atque optimi viri, ceterique fortissimi cives



qui circumstant senatum, quorum tu et frequentiam videre et studia perspicere et voces paulo ante exaudire potuisti. Quorum ego vix abs te iam diu manus ac tela contineo, eosdem facile adducam, ut te haec, quae vastare iam pridem studes, relinquentem usque ad portas prosequantur.—CICERO, CATIL., I.

2. *Cum tacent*: state clearly the use of the indicative and subjunctive moods with *cum*.

3. (a) *in templo*: where was the Senate at this time convened? Why here? What was the regular place of meeting? (b) Briefly sketch Catiline's life.

4. Translate:—

Atque ut eius diversa studia in dissimili ratione perspicere possitis, nemo est in ludo gladiatorio paulo ad facinus audacior, qui se non intimum Catilinae esse fateatur; nemo in scaena levior et nequior, qui se non eiusdem prope sodalem fuisse commemoret. Atque idem tamen, stuprum et scelorum exercitatione adsuefactus, frigore et fame et siti et vigiliis preferendis, fortis ab istis praedicabatur, cum industriae subsidia atque instrumenta virtutis in libidine audaciaque consumeret.

Atque haec omnia sic agentur, Quirites, ut maximae res minimo motu, pericula summa nullo tumultu, bellum intestinum ac domesticum post hominum memoriam crudelissimum et maximum, me uno togato duce et imperatore sedetur. Quod ego sic administrabo, Quirites, ut, si ullo modo fieri poterit, ne improbus quidem quisquam in hac urbe poenam sui sceleris sufferat.—CICERO, CATIL., II.

5. (a) *Ut possitis*: What is the principal clause on which this depends? Account for the subjunctive.

(b) Explain the use of the subjunctives *fateatur*, *consumeret*, *sufferat*.

(c) Narrate the circumstances under which the Second Oration against Catiline was delivered. Before whom, and when, was it spoken? State the argument.

[Pt. II., questions 1 to 5 of the First Year Entrance paper may be substituted for the following questions (6, 7 and 8).]

6. Translate: Caesar, B. G., V. ch. 30. *Hac in utramque.....fame intereant.*

7 (a) *Si—acciderit—reposcent*; *Si per te liceat—susteneant*: remark on these conditional clauses. (b) *qui—terrear*: why subjunctive? Remark on the mood in relative clauses. (c) Under what circumstances was this council of war held, what course was decided on, and with what consequences?

8. Translate: Caesar, B. G., VI. ch. 27. *Sunt item .....ipsae concidunt.*

[Pt. II., questions 6 and 7 of the First Year Entrance paper may be substituted for the following questions (9 and 10).]

9. Translate:—

“Vestibulum ante ipsum primoque in limine Pyrrhus  
exsultat, telis et luce coruscus ahena:  
qualis ubi in lucem coluber mala gramina pastus,  
frigida sub terra tumidum quem bruma tegebat,  
nunc positis novus exuviis nitidusque iuventa,  
lubrica convolvit sublato pectore terga  
arduus ad solem, et linguis micat ore trisulcis.  
Una ingens Periphas et equorum agitator Achillis  
armiger Automedon, una omnis Scyria pubes  
succedunt tecto, et flammæ ad culmina iactant.  
Ipse inter primos correpta dura bipenni  
limina perrumpit, postisque a cardine vellit  
aeratos; iamque excisa trabe firma cavavit  
robora, et ingentem lato dedit ore fenestram.  
Adparet domus intus, et atria longa patescunt;  
adparent Priami et veterum penetralia regum  
armatosque vident stantes in limine primo.—VIRG., AEN., II.

10. (a) Who are *Pyrrhus* and the *Scyria pubes*? (b) Give the principal parts of *pastus*, *sublato*. (c) Explain the case of *iuventa*, *tecto*, *ore*. (d) Describe the *bipennis*. From what is the word derived? (e) Distinguish between the use of the present tense in the verbs *perrumpit*, *vellit*, and the use of the perfect in *cavavit* and *dedit*. (f) Scan the first four lines.

11. Translate (at sight):—

*The reverence once paid to old age.*

Magna fuit quondam capitis reverentia cani,  
Inque suo pretio ruga senilis erat.  
Martis opus iuvenes animosaque bella gerebant,  
Et pro dis aderant in statione suis.  
Viribus illa minor, nec habendis utilis armis,  
Consilio patriæ saepe ferebat opem.  
Nec nisi post annos patuit tunc Curia seros,  
Nomen et ætatis mite Senatus erat.  
Iura dabat populo senior; finitaque certis  
Legibus est ætas, unde petatur honor.  
Et medius invenum, non indignantibus ipsis,  
Ibat, et interior, si comes unus erat.  
Verba quis auderet coram sene digna rubore  
Dicere? censuram longa senectæ dabat.  
Romulus hoc vidit, selectæque pectora Patres  
Dixit. Ad hos urbis summa relata novæ.

## SCHOLARSHIPS AND EXHIBITIONS.

## FIRST YEAR.

## GENERAL PAPER AND COMPOSITION.

FRIDAY, SEPT. 20TH, 1895 :—2 TO 5 P.M.

*Examiner*,..... J. L. DAY, M.A., M.D.

1. State the rules for the use of the pronoun *se*, and *suus*, and refer particularly to its use in the subordinate clause of a compound sentence.

2. (*a*) Classify the derivative verbs. (*b*) Illustrate the use of the supine in *um*. What class of nouns is derived from this supine?

3. Explain the formation of these words:—*est* (from *edo*), *diurnus*, *audacia*, *amas* : *λέξις*, *ποιητής*, *στρατηγός*, *ναυμαχία*, *ἄθεος*.

4. Remark on the participle in the following sentences: *morituri vos salutamus* : *venit auditurus* : *equitatu praemisso* : *ταῦτα ἐπραΐτε στρατηγῶν* : *τοῦτο ἐποίησε λαδῶν* : *ἀνέβη οἰθενὺς καλλόντος* : *μαχόμενοι διετέλειαν* : *παίονέν σε λήγοντα*.

5. How is a wish referring to past time expressed (1) in Latin, (2) in Greek? Illustrate this.

6. What constructions are found with: *quamquam*, *dummodo*, *antequam*, *donec*, *πριν*, *ὅπου*, *ὥς* (prep.) *μέχρι*?

7. Distinguish *potestas*, *potentia*, *imperium* : *videtur*, *apparet* : *sanare*, *mederi* : *scire*, *noscere* : *βούλομαι*, *θέλω* : *τις*, *τί* : *βίος*, *βίος*.

8. Write a short account of the life and works of Cicero or of Xenophon.

9. Translate into Greek :

He said that he was general, and that the others had no power to give any orders. They deliberated whether they should burn the Thebans by setting fire to the building, or should do something else with them. If you were really wise you would admire the beauty of virtue. He said that if anyone were to do this he would do the greatest injury to the State. Soerates thought that persons who did not know this would justly be called slavish; and I do not think that a wiser man could have been found.

10. Translate into Latin :

When Caesar had heard what the envoys said, he demanded their senate and the children of their leaders as hostages. He explained to Divitiacus how greatly it concerned the Roman people that he should lead the

forces of the Aedui into the country of the Bellovaci and lay waste their lands. After giving them instructions he sent off scouts, who soon reported that the Belgae were not far off. On getting this information, Caesar thought he ought to hasten over the Axona and pitch his camp on the other side of the river, whither the Remi and other States could bring supplies.

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## FIRST YEAR EXHIBITIONS.

### GEOMETRY.

WEDNESDAY, SEPTEMBER 18TH, 1895 :—MORNING, 9 TO 12.

*Examiner*,.....H. M. TORY, B.A.

1. To a given straight line to apply a parallelogram, which shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

2. In a triangle whose vertical angle is a right angle, a straight line is drawn from the vertex perpendicular to the base. Shew that the rectangle contained by the segments of the base is equal to the square on the perpendicular.

3. To describe a square that shall be equal to a given rectilinear figure.

4. If a straight line touch a circle, and from the point of contact a straight line be drawn cutting the circle, the angles made by this line with the line touching the circle must be equal to the angles which are in the alternate segments of the circle.

5. If two circles touch internally at a point, any straight line passing through the point will divide the circles into segments capable of containing equal angles.

6. The opposite angles of any quadrilateral figure, inscribed in a circle, are together equal to two right angles.

\* 7. If the vertical angle of a triangle be bisected by a straight line, which also cuts the base, the segments of the base must have the same ratio which the other sides of the triangle have to one another.

\* 8. To find a mean proportional between two given straight lines.

\* 9. In a given circle to inscribe a triangle equiangular to a given triangle.

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\* Extra questions.

## FIRST YEAR EXHIBITIONS.

## ALGEBRA AND ARITHMETIC.

WEDNESDAY, SEPTEMBER 18TH :—AFTERNOON, 2 TO 5.

*Examiner*, ..... H. M. TORRY, B.A.

1. Investigate a formula for finding the sum of a series in geometrical progression. Find the sum of six terms of the series  $2, -3, +\frac{9}{2}, -\text{etc.}$

2. Insert 4 harmonic means between  $\frac{1}{2}$  and  $\frac{1}{3}$ .

3. The sum of an infinite geometrical series is 4, and the second term is  $\frac{3}{4}$ . Find the series.

4. Solve the equations:

$$(1) \frac{x+a}{x-b} + \frac{x+b}{x-a} = 2$$

$$(2) (x-1)(x-2) + (x-2)(x-3) + (x-3)(x-1) = 11$$

$$(3) x-y=1; \frac{x}{y} - \frac{y}{x} = \frac{1}{6}$$

$$(4) \sqrt{7x+1} - \sqrt{3x+10} = 1$$

5. Find the square root of  $4x^2a^2 - 12xat + 25 - 24x^{-1}a + 16x^{-2}a^2$ .

6. Prove that

$$\left(\frac{1}{1-x}\right)\left(\frac{1}{1-y}\right) + \left(\frac{1}{1-x}\right)\left(\frac{1}{1-z}\right) + \left(\frac{1}{1-y}\right)\left(\frac{1}{1-z}\right) + \left(\frac{1}{1-x}\right)\left(\frac{1}{1-y}\right)\left(\frac{1}{1-z}\right)$$

7. A tricyclist rode 180 miles at a uniform rate. If he had ridden 3 miles an hour slower than he did, it would have taken him 3 hours longer. How many miles did he ride?

8. Simplify  $2\frac{1}{2} + 3\frac{1}{3} - 4\frac{1}{4} + 5 + \frac{1}{5}$  of  $6\frac{1}{2}$ .

9. Find the cost of papering a room 20 feet long,  $13\frac{1}{2}$  feet broad and 12 feet high, the price of a piece of paper 12 yds. long and  $\frac{1}{3}$  of a yard wide being 90 cents.

10. Find the square root of 5.5 to 4 places of decimals.

11. If a pace is 2 ft. 7 in., reduce 40,000 paces to miles.

12. Find the compound interest on \$32,000 for 4 years at  $2\frac{1}{2}$  per cent.



## FIRST YEAR EXHIBITIONS.

## ENGLISH LITERATURE.

SHAKSPERE: *Macbeth*.

THURSDAY, SEPT. 19TH, 1895 :—AFTERNOON, 2 TO 5.

*Examiner*, ..... CHAS. E. MOYSE, B.A.

1. Give a list of the important characters in the play, and mention the fate of each.

2. Trace Macbeth through the play.

3. Give the meaning, and nothing else, of the following words, and say, when you can, where each occurs : coign, shard-borne, adder's fork, dudgeon, magot-pies, gorms, Acheron.

4. Give good illustrations from the play of the following characteristics of Elizabethan English : (*a*) the free use of compound words, (*b*) the obsolete use of personal and relative pronouns, (*c*) the ease with which words may be transferred from one part of speech to another, (*d*) the exact and not the metaphorical use of words.

5. Scansion. Give instances of the contraction and expansion of words, and say where they occur.

6. Write a page on the character of Duncan, and another on the character of Lady Macbeth.

CONCOURS POUR LES BOURSES ET PRIX DE 1<sup>ère</sup> ANNÉE.

Le 20 SEPT., 1895 :—De 9 h. à midi.

*Examinateur*, ..... M. INGLES

1. Dictée.

2. Indiquer l'emploi des pronoms *en* et *y*. Donner des exemples.

3. Traduire les passages suivants :—

Every modern army is divided into two classes : commissioned officers and enlisted men. The former carry swords and direct ; the latter constitute the fighting strength. The regiment is the unit, and on its quality the value of its components will depend. This regimental character must always be determined in great measure by the fitness of its officers. They are the nerves by which the purpose of the commander is communicated to the mass ; and if they are deficient in spirit, knowledge, or determin-

ation, when it stands in the forefront of battle, those who place dependence on it will be sure to suffer disappointment. The soldier looks to his officer, not merely for orders, but for example. Drill and discipline are only instrumentalities by which the efficiency of men and officers are alike enhanced. Drill merely familiarizes both with their respective functions; the use of discipline is only to establish confidence between the enlisted man and his officer. If that confidence already exists, it requires very little drill to make the recruit a soldier; if it has to be created, the habit of obedience must take the place of personal confidence.

*A. W. Tourgée.*

Aujourd'hui, à cette heure du jour qui devient insensiblement de la nuit, et où ma pensée était allée mélancoliquement au passé, cherchant à retrouver les êtres chers qui n'étaient plus, j'avais laissé venir le crépuscule dans mon cabinet de travail, sans demander la lampe, et peu à peu, l'image de mon père, que j'ai perdu à douze ans, m'apparaissait à la clarté des braises du foyer presque éteint, m'apparaissait dans le mystérieux brouillard et le pâle effacement d'un pastel, accroché à la muraille et reflété dans la glace que l'on a devant soi.

*Edmond de Goncourt.*

Dater en toutes lettres.

## EXHIBITION AND SCHOLARSHIP EXAMINATIONS.

### FIRST YEAR GERMAN.

#### DONALDA DEPARTMENT.

SEPT. 17TH, 1895 :—MORNING, 9 TO 12.

*Examiner*,.....L. R. GREGOR, B.A.

#### 1. Translate into English :—

##### (a) Der Gang nach dem Eisenhammer.

Drum vor dem ganzen Dienertrosz  
Die Gräfin ihn erhob;  
Aus ihrem schönen Munde flosz  
Sein unerschöpftes Lob.  
Sie hielt ihn nicht als ihren Knecht,  
Es gab sein Herz ihm Kindesrecht;  
Ihr klares Auge mit Vergnügen  
Hing an den wohlgestalteten Zügen.

## (b) Adler's Reader.

Der arme Hahn, er sollte sich wahren ;  
 Das gar zu gescheidt sein bringt Gefahren  
 Er kannte den Fuchs, er hätte nicht sollen  
 Ihm seine Rätsel raten wollen.  
 Nun hat's ihn gereut zu tausend Malen,  
 Nun musz er's mit seiner Haut bezahlen.

## (c) Das Lied von der Glocke.

Der Meister kann die Form zerbrechen  
 Mit weiser Hand, zur rechten Zeit ;  
 Doch wehe, wenn in Flammenbüchen  
 Das glühnde Erz sich selbst befreit !  
 Blindwütend, mit des Donners Krachen,  
 Zersprengt es das geborstne Haus,  
 Und wie aus offenem Höllenrachen  
 Speit es Verderben zündend aus.  
 Wo rohe Kräfte sinnlos walten,  
 Da kann sich kein Gebild gestalten ;  
 Wenn sich die Völker selbst befreien  
 Da kann die Wohlfahrt nicht gedeihn.

## 2. Translation at sight.

Translate :—

Als er ihn fast erreicht hatte, schwenkte er seine Mütze und rief mit heller Stimme : " Willkommen, willkommen, Bruder Reinhardt ! Willkommen auf Gut Immensee ! "

" Gott grüsz dich, Erich, und Dank für dein Willkommen ! " rief ihm der andere entgegen.

Dann waren sie zu einander gekommen und reichten sich ed Hände. " Bist du es denn aber auch ? " sagte Erich, als er so nahe in das ernste Gesicht seines alten Schulkameraden sah.

" Freilich bin ich's, Erich, und du bist es auch ; nur siehst du fast noch heiterer aus, als du schon sonst immer gethan hast. "

Ein frohes Lächeln machte Erichs einfache Züge bei diesen Worten noch um vieles heiterer. " ga, Bruder Reinhardt, " sagte er, diesem noch einmal seine Hand reichend, " ich habe aber auch seitdem das grosze Los gezogen ; du weisst es ja. " Dann rieb er sich die Hände und rief vergnügt : " Das wird eine Überraschung ! Den erwartet sie nicht, in alle Ewigkeit nicht ! "

## 3. Translate into German :

(a) At length autumn came. The whole family spent a few days in the country. It was not as warm as in summer, but the air was soft and the sky clear. "The fine season," said Ernest's mother, "will soon be past; winter is at the door." "I wish it would stay away," said Ernest. "Would you really like that?" said his father. "Yes, indeed," was his reply.

(b) Have you ever been in the Northwest? No, but I have a great many relatives there. They are very proud of the new country. They say they can produce the finest wheat in the world.

(c) I have just returned from the Public Library. I was allowed to see the list of new books. They have Balfour's last work, some books of travel, a few novels translated from the German, a nice pocket edition of Shakspeare, and about a hundred other volumes of all kinds.

4. What cases do the following verbs govern, and in what circumstances are these cases severally employed? *fragen, nennen, lehren, begeben, träumen, sich erinnern, gehorchen, sich erbarmen.*

5. Ich habe *mir* die Sache angesehen. Comment on this case of *mir*.

6. Give the comparative and superlative of *gut, hoch, viel, groz, lang, kurz, blasz, stark.*

7. Give as many words as you can after which the adjective may have weak or strong endings.

8. Render into German in all possible ways *I am receiving help.*

9. When does the relative clause immediately follow its antecedent? Give an example.

10. In No. 1 (a) comment on the position of *erhob, hing*. Decline in the singular *ihr kluges auge*. Parse *hielt, knecht*.

In No. 1 (b) parse the third and fourth lines in full.

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## SECOND YEAR ENTRANCE AND FIRST YEAR SUPPLEMENTAL.

## LATIN.

TUESDAY, SEPTEMBER 17TH, 1895:—AFTERNOON, 2 TO 5.

*Examiner*,..... A. JUDSON EATON, M.A., PH. D.*Assistant Examiner*,..... JOHN L. DAY, M.A., M.D.

NOTE.—Candidates for Second Year Entrance are required to take *any two* of the following sections.

## I. VIRGIL, AENEID, BK. VI.

Hinc *via*, Tartarei quæ fert Acherontis ad undas :  
 Turbidus hic coeno vastaquæ voragine gurgēs  
 Aestuat, atque omnem *Coccyto* eructat arenam.  
 Portitor has horrendus aquas et flumina servat  
 Terribili *squalore* Charon ; cui plurima mento  
 Canities inculta iacet ; stant lumina flamma ;  
 Sordidus ex umeris nodo dependet amictus.  
 Ipse ratem conto subigit *velis* quæ ministrat,  
 Et ferruginea subvectat corpora cymba  
 Iam senior ; sed cruda *deo* viridisque senectus.  
 Iluc omnis turba ad ripas effusa ruebat,  
 Matres atque viri, defunctaque corpora vita  
 Magnanimum heroum, pueri innuptaeque puellae,  
 Impositique rogis iuvenes ante ora parentum :  
 Quam multa in silvis auctumni frigore primo  
 Lapsa cadunt folia ; aut ad terram gurgite ab alto  
 Quam multae glomerantur aves, ubi frigidus annus  
 Trans pontum fugat et terris inmittet apricis.—295–312.

(a) Explain the grammatical construction of italicized words in the above extracts. (b) Decline *Aeneas*, *nemus*. Give the principal parts of *fert*, *iacet*, *cadunt*, *refugit*, *funduntur* (marking the quantity of each vowel). (c) Remark on the metre of the Aeneid, explaining the terms, *ictus*, *arsis*, *thesis*, *caesura of the foot*, *caesura of the verse*, *feminine caesura*. (d) Scan the first four lines, marking the position of the caesura. Mark the quantity of each syllable of 306, giving reasons for the length, where you can.

(e) Remark on the following constructions: (1) *hic labor ille domus*. (2) *Tu quoque magnam partem apere in tanto, sineret dolor, Icare, haberes*. (3) *ipsa canas oro*. (4) *quid memorem Alciden?* (5) *facilis descensus Averno*. (6) *tequæ aspectu ne subtrahere nostro*. (7) *hac iter Elysium nobis*. (8) *hac Troiana tenus fuerit fortuna secuta*.



## II. CICERO DE AMICITIA.

Quocirca (dicendum est enim saepius), cum iudicaveris, diligere oportet: non, cum dilexeris, iudicare. Sed cum multis in rebus negligentia plectemur, tum maxime in amicis et diligendis et colendis. Prae-posteris enim utimur consiliis, et acta agimus, quod vetatur verteri proverbio. Nam implicati ultro et citro, vel usu diuturno, vel etiam officiis, repente in medio cursu amicitias, exorta aliqua offensione, disrumpimus.

Quo etiam magis vituperanda est rei maxime necessariae tanta incuria. Una est enim amicitia in rebus humanis, de cuius utilitate omnes uno ore consentiunt: quanquam a multis ipsa virtus contemnitur, et venditatio quaedam atque ostentatio esse dicitur.

(a) *acta agimus*: an oxymoron. Explain.

(b) *rei*: explain the genitive, and show to what it is equivalent.

(c) Write brief notes on the following expressions: *virili toga*; *hemicycelio*; *idoneum mihi Laeli persona visa est quae de amicitia ea ipsa dissereret* (Explain the form of the gen. *Laeli* and the use of the subjunctive *dissereret*); *pingui Minerva* (What is a more common form of this Latin proverb?)

## III. SALLUST CATILINE.

Sed ubi ille assedit, Catilina, ut erat paratus ad dissimulanda omnia, demisso voltu, voce supplici postulare, patres conscripti ne quid de se temere crederent; ea familia ortum, ita ab adolescentia vitam instituisse, ut omnia bona in spe haberet; ne existimarent sibi patricio homini, cujus ipsius atque majorum plurima beneficia in populum Romanum essent, perdita re publica opus esse, quum eam servaret M. Tullius inquilinus civis urbis Romae. Ad hoc maledicta alia quum adderet, obstrepere omnes, hostem atque parricidam vocare. Tum ille furibundus: "quoniam quidem circumventus," inquit, "ab inimicis praeceps agor, incendium meum ruina restinguam."

(a) Account for the case of *voltu*, *sibi*. (b) Explain the subjunctive moods in the passage. (c) *postulare*—What infin.? (d) Write a note on the term *patres conscripti*. (e) What constructions follow *opus est*? (f) Give a brief synopsis of the work *de Catilinae coniuratione*. (g) Distinguish (1) between Gerund and Gerundive; (2) between *refert* and *refert*, quoque and quoque, *sēdēs* and *sēdēs*. (h) Write notes on—*Massilia*: *aruspices*, *censores*; *quaestor pro praetore*: *nonas Decembres*.

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## GREEK.

SECOND YEAR ENTRANCE AND FIRST YEAR  
SUPPLEMENTAL.

TUESDAY, SEPT. 17TH :—9 TO 12 A.M.

*Examiner*, ..... J. L. DAY, M.A., M.D.

1. Translate :—Hellenics, Bk. I. v. §§ 2-5.

(α) Καὶ αὐτὸς οὐκ ἀλλ' ἐγνώκεναι. Explain the case of αὐτός. (β) ἐὰν δὲ ταῦτα ἐκλίπη—which form of condition? (γ) How much was a δραχμή? (δ) Give the principal parts of ἀναλώσει, ἔδωκεν, and ἐκλίπη. (ε) The derivation of τάλαντον.

2. Translate : Bk. I. vi. §§ 8-12.

(α) διὰ τὸ οἰκοῦντας—what use of article? (β) Explain fully the constructions involved in ὅπως ἀνβλάπτωεν and ἕως ἀνῆκωσιν. (γ) Write down the principal parts of πείσαι and πεπονθέναι. (δ) What other verbs have the same construction as ὑπὶσχοῦμαι?

3. Explain the following : potential indicative, anacoluthon, anarthrous, crasis, gnomic aorist.

4. Decline ναῦς, βασιλεὺς, τριηρής in the singular : conjugate κάθημαι in the present indicative.

5. Give instances of ἂν in the conditional sentence, and show its force.

6. A short account of Xenophon's life and works.

7. Translate Homer, Odys. XI., vss. 605-614.

ἀμφὶ δέ μιν κλαγγὴ νεκύων ἦν οἰωνῶν ὥς,

πάντοσ' ἀτυζομένων· ὁ δ' ἐρεμνῇ νυκτὶ ἐοικώς,  
 γυμνὸν τόξον ἔχων καὶ ἐπὶ νευρῇφιν οἶστον.  
 δεινὸν παπταίνων, αἰεὶ βαλέοντι ἐοικώς.  
 σμερδαλέος δέ οἱ ἀμφὶ περὶ στήθεσσιν ἀορτὴρ  
 χρύσεος ἦν τελαμῶν, ἵνα θέσκελα ἔργα τέτυκτο,  
 ἄρκτοι τ' ἀγρότεροί τε σύες χαροποί τε λέοντες,  
 ὑσμῖναί τε μάχαι τε φόνοι τ' ἀνδροκτασῖαι τε.  
 μὴ τεχνησάμενος μηδ' ἄλλο τι τεχνήσαιτο,  
 ὃς κείνον τελαμῶνα ἐῖν ἐγκάτθετο τέχνη.

8. With which word is *μὴ* (vs. 613) to be construed? Remark on the use of the so-called *φι* case. Explain the construction of *τεχνήσαιτο*. Mood and tense of *ἐοικώς* and *τέτυκτο*. Derive *δικασπόλον*, *νημερτέα*.

9. By what names or terms are the dead spoken of in *Odyssey XI*? State briefly the Homeric idea of Hades.

10. Translate, Homer, *Iliad VI*.

Ὡς ἄρα φωνήσας ἀπέβη κορυθαίολος Ἴκτωρ.  
 αἶψα δ' ἔπειθ' ἵκανε δόμους εὐναιετάοντας,  
 οὐδ' εὖρ' Ἀνδρομάχην λευκώλενον ἐν μεγάροιςιν,  
 ἀλλ' ἦγε ξὺν παιδὶ καὶ ἀμφιπόλῳ ἐνπεπλῶ  
 πύργῳ εφεστήκει γοοῶσά τε μυρομένη τε.  
 Ἴκτωρ δ' ὥς οὐκ ἔνδον ἀμύμονα τέμνεν ἄκοιτιν,  
 ἔσθη ἐπ' οὐδὸν ἰὼν, μετὰ δὲ δμῶησιν ἔειπεν·  
 “εἰ δ' ἄγε μοι, δμῳαί, νημερτεα μυθήσασθε.  
 πῇ ἔβη Ἀνδρομάχῃ λευκώλενος ἐκ μεγάροιο;  
 ἢ ἐπὶ πῇ ἐς γαλῶν ἢ εἰνατέρων ἐνπεπλῶν,  
 ἢ ἐς Ἀθηναίης ἐξοίχεται, ἔνθα περ ἄλαι  
 Τρῳαὶ εὐπλόκαμοι δεινὴν θεὸν ἰλάσκονται;  
 τὸν δ' αὖτ' ὀτρηνὴ ταμὶν πρὸς μῦθον ἔειπεν·  
 “Ἴκτορ, ἐπεὶ μάλ' ἄνωγας ἀληθέα μυθήσασθαι,  
 “οὔτε πῇ ἐς γαλῶν οὔτ' εἰνατέρων ἐνπέπλῶν,  
 οὔτ' ἐς Ἀθηναίης ἐξοίχεται, ἔνθα, περ ἄλλαι  
 Τρῳαὶ εὐπλόκαμοι δειλὴν θεὸν ἰλάσκονται;”

11. (a) Etymology and meaning of : *γλαυκῶπις, ἄμβρατος, ἄσβεστον, μενεπτόλεμος, τρίποδα*. (b) Scan the first five lines, explaining any peculiarities in the metre. (c) Write a short note on the Digamma. (d) Give Attic for Epic forms in the above passage.

12. Translate Xenophon, Anab. I.

The questions on this author are found in the First Year Exhibition paper.

NOTE.—Candidates may choose between the Hellenics I. and Odyssey XI.; and Anabasis I. and Iliad VI.

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Supplemental. (English of the First Year.)

#### LECTURES.

1. Write a sketch of the career of Sir Philip Sidney.
2. Trace the vicissitudes of the struggle between Parliament and the Stuarts 1603-1649.
3. Enumerate Milton's prose works, and indicate their character as fully as possible.
4. Make notes on Ben Jonson, Euphuism, Verulamian philosophy.

#### COMUS.

6. Enunciate the moral purpose of Comus.
  7. Follow the Attendant Spirit throughout the poem.
  8. Quote any ten lines.
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## SCHOLARSHIPS AND EXHIBITIONS.

## SECOND YEAR.

## GREEK.

XENOPHON : *Hellenics* I. and II.

DEMOSTHENES : *Olynthiacs* I. and II.

HERODOTUS : Book III.

## SIGHT TRANSLATION.

TUESDAY, SEPT. 17TH, 1895 :—9 TO 12 A.M.

*Examiner*, ..... J. L. DAY, M.A., M.D.

1. Translate Xen. *Hell.* I. vi., §§ 8-12 ; and see questions on same in Second Year entrance paper.

2. Translate Xen. *Hell.* II. iii., §§ 24-26.

τοῦ καιροῦ : explain the case. How does καιρός differ from χρόνος ? πολυανθρωποσύνην : write a note on the population of Athens. What is the force of the preposition in περισώσασιν ? γένοιτο.....διατελοῖεν : explain the construction. δίκην διδόναι : what is the opposite of this ? Give Latin equivalents for both.

3. Notes on παιᾶνα. οἱ ἑνδεκα, δραχμή, ἀκρωτήρια, Κριτίας, ἀτίμους, Ηηραμένης.

4. Translate Dem. *Olyn.* I. 13 τί οὖν.....τῇ χώρᾳ.

ἵνα γινώτε : supply the ellipsis. Explain the construction found with ἀγαπᾶν. εἰ ἐγνωκώς ἔσται : explain this future : in which voices may it occur ? τελευτῆσαι. which tense would we expect ? account for the use here of the aorist.



ἐκεῖθεν: Dindorf remarks of this: "ἐκεῖθεν, per attractionem dictum." Explain his meaning. ἥξοντα: note the construction. Explain the metaphor in ὑποστείλασθαι.

5. Translate Dem. *Olyn.* II. 26. ὑμεῖς δὲ, ὅταν ..... ποιῆσαι.

ὅταν ..... ἀποβλέψητε; why is ὅταν used, and not ὅτε? κατὰ συμμορίας: explain the term. ὡς τούτους: what is peculiar in the use of the preposition? Distinguish ποιέω and πράττω. In οὐ θαυμαστόν ἐστιν εἰ ..... what is noticeable? What other words take a similar construction?

6. The object and dates of the Olynthiac orations. Explain the metaphors in συγκεκροτημένοι and ἀνεχαίτισε. Write a note on τὸ θρυλούμενον, and on τὸ θεωρικόν.

7. Translate Herodotus III., cap. 120.

ἐπεθύμησε πρήγματος: what genitive? Mention other words synonyms of ἐπιθυμέω and differentiate. In what dialect did Herodotus write? τῷ οὔνομα εἶναι: why infinitive? Derive εὐπετέα. Write a short criticism of Herodotus as a historian.

8. Translate at sight:

Δειπνῶν δὲ ὁ Ἀστυάγης σὺν τῇ θυγατρὶ καὶ τῷ Κύρῳ, βουλόμενος τὸν παῖδα ὡς ἥϊστα δειπνεῖν, ἵνα ἦτον τὰ οἴκαδε ποθοίη, προσήγαγεν αὐτῷ καὶ παροψίδας καὶ παντοδαπὰ ἐμβάσματα καὶ βρώματα. τὸν δὲ Κῦρον ἔφασαν λέγειν, ὦ πάππε, ὅσα πράγματα ἔχεις ἐν τῷ δεῖπῳ, εἰ ἀνάγκη σοι ἐπὶ πάντα τὰ λεκάνια τοῦτα διατείνειν τὰς χεῖρας καὶ ἀπογεύεσθαι τούτων τῶν παντοδαπῶν βρωμάτων. Τί δέ, φάναι ὁ Ἀστυάγης, οὐ γὰρ πολὺ σοι δοκεῖ εἶναι κάλλιον τόδε τὸ δεῖπνον τοῦ ἐν Πέρσαις; ὁ δὲ Κύρος πρὸς ταῦτα ἀποκρίνασθαι λέγεται, Οὐκ, ὦ πάππε, ἀλλὰ

πολὺ ἀπλουστέρα καὶ εὐθυτέρα παρ' ἡμῖν ἢ ὁδὸς ἐστὶν ἐπὶ τὸ ἐμπλησθῆναι ἢ παρ' ὑμῖν· παρ' ἡμῖν μὲν γὰρ ἄρτος καὶ κρέα εἰς τοῦτο ἀπάγει, ὑμεῖς δὲ εἰς μὲν τὸ αὐτὸ ἡμῖν σπεύδετε, πολλοὺς δὲ τινὰς ἐλιγμοὺς ἄνω καὶ κάτω πλανώμενοι μόλις ἀφικνεῖσθε ὅποι ἡμεῖς πάλαι ἤκομεν.

## SECOND YEAR EXHIBITIONS, 1895.

## LATIN.

TUESDAY, SEPT. 17TH ;—AFTERNOON, 2 TO 5.

Examiner, .... A. JUDSON EATON, M.A., Ph.D.

1. Translate : Virgil, Georgics, Bk. I., vss. 176-186 ; 424-437.

2. (a) Scan lines 434-7. Note two metrical licenses in line 437, and show to what they are due.

3. (a) Write brief explanatory notes on the following : (1) *Chaoniam glandem* ; (2) *Chalybes* ; (3) *Gargarus* ; (4) *Eleusinae Matris* ; (5) *Cnosia stella Coronae* ; (6) *Glaucus* ; (7) *ter sunt conati imponere Pelio Ossam* ; (8) *Satis iam pridem sanguine nostro Laomedontae luimus periuria Troiae* ; (9) *Ergo inter sese paribus concurrere telis Romanas acies iterum videre Philippi* ; (10) *Stry moniae grues*.

4. Translate : Horace, Odes, Bk. I.

(a) Sic te diva potens Cypri,  
 Sic fratres Helenae, lucida sidera,  
 Ventorumque regat pater,  
 Obstrictis aliis, praeter Iapyga,  
 Navis, quae tibi creditum  
 Debes Virgilium finibus Atticis  
 Reddas incolumem, precor,  
 Et serves animae dimidium meae.  
 Illi robur et aes triplex  
 Circa pectus erat, qui fragilem truci  
 Commisit pelago ratem  
 Primus, nec timuit praecipitem Africum  
 Decertantem Aquilonibus,  
 Nec tristes Hyadas, nec rabiem Noti  
 Quo non arbiter Hadriae  
 Maior, tollere seu ponere vult freta.—ODE III.

(b) *Parcus deorum cultor et infrequens,  
Insanientis dum sapientiae  
Consultus erro, nunc retrorsum  
Vela dare atque iterare cursus*

*Cogor relictos: namque Diespiter,  
Igni corusco nubila dividens  
Plerumque, per purum tonantes  
Egit equos volucremque currum;*

*Quo bruta tellus, et vaga flumina,  
Quo Styx et invisi horrida Taenari  
Sedes Atlanteusque finis  
Concutitur.—ODE XXXIV.*

5. (a) Is it probable that the Virgilius mentioned in Ode III. was the poet? (b) What deities are here mentioned, and why are they specially invoked? (c) Where was Taenarus, and what ancient tradition was connected with it?

6. (a) *finibus Atticis*: do you connect these words with *debes* or *reddas*? Why? (b) *per purum*: supply the ellipse. (c) Explain the Syntax of the following words—*regat, reddas, quo, sapientiae*. (d) Give the principal part of—*obstrictis, tollere, tonantes, promens*.

7. Explain fully the metres of Ode III. and Ode XXXIV.

8. Translate: Livy, Bk. XXII, ch. 41

9. Translate and explain the grammatical construction of the italicized phrases and sentences:—(a) *Dum consul placandis Romae dis habendoque dilectu dat operam*, Hannibal profectus ex hibernis. (b) *Ibi castra in aperto locat, ubi ipse cum Afris modo Hispanisque consideret*. (c) *Flammius cum ad lacum pervenisset, inexplorato postero die vixdum satis certa luce angustis superatis, postquam in patentiorem campum pandi agmen coepit, id tantum hostium, quod ex adverso erat, conspexit*. (d) *Ipse imperat duci, ut se in agrum Casinatem ducat, edoctus a peritis regionum, si eum saltum occurrasset, exitum Romano ad opem ferendam sociis interclusurum*.

10. Translate (at sight):

Metellus, postquam de rebus Vagae actis comperit, paullisper maestus e conspectu abit; deinde, ubi ira et aegritudo permixta sunt, cum maxuma cura ultum ire iniurias festinat. Legionem, cum qua hiemabat, et quam plurimos potest Numidas equites pariter cum occasu solis expeditos educit, et postera die circiter horam tertiam pervenit in quandam plantiæ locis paullo superioribus circumventam. Ibi milites fessos itineris magnitudine et iam abnuentis omnia docet oppidum Vagam non amplius mille passuum abesse, decere illos reliquum laborem aequo animo pati, dum pro civibus

suis, viris fortissimis atque miserrimis, poenas caperent; praeterea praedam benigne ostendat. Sic animis eorum arrectis, equites in primo late, pedites quam artissime ire et signa occultare iubet.

Vagenses ubi animum advortere ad se versus exercitum pergere, primo, uti era tres, Metellum esse rati, portas clausere; deinde, ubi neque agros vastari, et eos qui primi aderant, Numidas equites vident, rursum Iugurtham arbitrati cum magno gaudio obvii procedunt. Equites peditesque repente signo dato alii vulgum effusum oppido caedere, alii ad portas festinare, pars turris capere; ira atque praedae spes amplius quam lassitudo posse. Ita Vagenses biduum modo ex perfidia laetati; civitas magna et opulens cuncta poenae aut praedae fuit. Turpilium, quem praefectum oppidi unum ex omnibus profugisse supra ostendimus, iussus a Metello causam dicere, postquam sese parum expurgat, condemnatus verberatusque capite poenas solvit; nam is civis ex Latio erat.

## SECOND YEAR EXHIBITIONS, 1835.

## GENERAL PAPER.

FRIDAY, SEPTEMBER 20TH :—2 TO 5 P.M.

*Examiner*, ..... A. JUDSON EATON, M.A., PH.D.

1. (a) Give the constructions, as to mood and tense, with *dum*, *donec*, and *antequam*.

(b) How are the future conditions expressed in Greek and Latin? Illustrate by examples.

2. "The English Infinitive cannot always be translated by the Latin Infinitive." Explain and illustrate by examples, this observation. How do you translate the English Infinitive after *iubeo* and *conor*?

3. Write a note on the following grammatical figures: (a) Zeugma; (b) Synaeresis; (c) Diaeresis; (d) Hendiadys; (e) Tmesis.

4. (a) Connect *etymologically* the following words with any corresponding Latin words: ἄλς, ἡδὺς, βροτός, ἐλαχὺς, θήρ, χειμῶν, ἐπομαι, also the following words with corresponding English words: *qui*, *genu*, *reho*, *hortus*, *dens*. (b) Give the derivation and meaning of the following words: βῆμα, δακτυλός, Δευτερονόμιον, ἐλπίς, μείζων; toga, solemnity, simplex; anacoluthon, apothecary, ambrosia, duel, pilgrim. (c) Account for the *d* in *prodeo*, *redeo*, *prodesse*.

5. Write on *any five* of the following topics : (1) The Tribunal of the Areopagus. (2) Battle of Chaeronea. (3) The Greek Sense of Beauty. (4) The Early Government of Rome : King, Senate and Popular Assembly. (5) Fabius, the Delayer. (6) The Last Struggle of the Republic at Philippi.

6. Translate into Greek : (1) Not only you, but also your friends, will prosper if you do this. (2) They who have sinned against the State will not escape with impunity. (3) The constitution will have been perfectly arranged, if such a guardian superintends it. (4) Would that the physician had been here ! (5) But if we shall fall into the power of the King, what will prevent us from being put to death, after suffering all that is most terrible ?

7. Translate into Latin :

(A) I do not know whether there is anything more agreeable than to hear one's praises uttered by someone who is free from flattery. The following remark of Cicero illustrates this better than a thousand treatises on flattery :—"The most subtle flattery," says that author, "is to tell your friend that he is above flattery, and to say that you do not know how to flatter him." It happened once that a Roman senator, named Lentulus, had a needy obsequious Greek fellow dining with him, who tried in vain to flatter his host. Lentulus laughed at his awkward attempts, and said : (*Orat. Rect.*) "I flatter myself, sir, that I am indifferent to flattery." (*Orat. Rect.*) "Had I known that," replied the Greek, "I should have known how to flatter you, but you have taught me a good lesson, and I will not forget it."

(B) True friendship is, as Laelius says, to be preferred to all other human blessings ; nothing is so valuable either in prosperity or adversity. It is, however, only among the good that such friendship can exist. But we must not, like the Stoics, set up a standard of goodness to which no mortal can ever hope to conform. Let us understand by "good" those who have such virtues as really exist in the practice of every-day life—honor, uprightness, and so forth--and are free from licentiousness, unscrupulousness, and other vices.

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## SECOND YEAR EXHIBITIONS, 1895.

## EUCLID—ALGEBRA—TRIGONOMETRY.

WEDNESDAY, SEPT. 18TH:—MORNING, 9 TO 12.

Examiner, .....ALEX. JOHNSON, M.A., LL.D.

Assistant Examiner,.....H. M. TORY, B.A.

Write the answers on separate books marked A and B respectively, to correspond to the questions.

## A.

1. Construct a regular pentagon equal to a given square.
2. On a given straight line construct a segment of a circle containing an angle equal to the angle of an equilateral triangle.
3. Find a number such that the sum of it and of its square root is 90.
4. Solve the equations :

$$3x^2 - 10x + 6 = 0$$

$$(x-a)^2 + (x-b)^2 = (a-b)^2$$

$$ax + by = c, \quad a'x + b'y = c'$$

$$(a^2 + x)(b^2 + x) = (ab + x)^2.$$

$$5. \text{ The area of any triangle} = \sqrt{s(s-a)(s-b)(s-c)}.$$

6. Find the circular measure of an angle subtended at the centre of a circle whose radius is 8 feet by an arc 3 feet in length, and convert it into seconds.

## B.

7. If four straight lines be proportionals, the similar rectilineal figures similarly described on them shall also be proportionals.

8. Equal parallelograms which have one angle of the one equal to one angle of the other have their sides about the equal angles reciprocally proportional.

9. Solve the equations :—

$$(1) \frac{x+a}{x-b} + \frac{x+b}{x-a} = 2$$

$$(2) \left. \begin{aligned} \frac{x}{a} - \frac{y}{b} &= 1 \\ \frac{x}{b} + \frac{y}{a} &= \frac{a}{b} \end{aligned} \right\}$$

$$(3) \frac{x+y}{x-y} + \frac{x-y}{x+y} = \frac{5}{2}$$

$$x^2 + y^2 = 90.$$

10. Find the Greatest Common measure of  $12x^2 - 15xy + 3y^2$  and  $6x^3 - 6x^2y + 2xy^2 - 2y^3$ .

11. (a) Given that the sine of an angle equals  $\frac{5}{13}$ ; construct the angle.

(b) Compare the trigonometrical ratios of an angle and its supplement.

12. In any triangle, show that

$$(1) \tan \frac{A+B}{2} = \frac{a+b}{a-b}$$

$$\tan \frac{A-B}{2} = \frac{a-b}{a+b}$$

$$\sin \frac{A}{2} = \sqrt{\frac{(s-b)(s-c)}{bc}}$$

## SECOND YEAR EXHIBITIONS, 1895.

### GEOMETRY.

WEDNESDAY, SEPT. 18TH:—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, M.A., LL.D.  
 Assistant Examiner, ..... H. M. TORY, B.A.

*Write the answers in separate books marked A and B respectively to correspond to the questions.*

#### A

1. If two circles touch three given circles, the pole of that axis of similitude of the three circles, which is also the radical axis of the two, with respect to any of the three circles, lies on the chord of contact of that circle.

2. The anharmonic ratio of four points in a straight line is equal to that of the pencil formed by their four polars.

3. If a circle touch two given circles (the nature of the contacts being assigned), the polar of its centre, with respect to one of the given circles, always touches a given circle.

4. Through a given point, draw a straight line, so as to form with the sides of a given angle a triangle of given area.

5. Describe a circle which shall bisect three given circumferences.
6. Through a given point within a given angle, draw a straight line cutting the legs of the angle so that it shall be divided at the point in a given ratio.

## B

7. If any point on the circumference of a circle be joined to the three angles of an inscribed equilateral triangle, the straight line drawn to the remote angle is equal to the sum of the other two.
8. Two vertices of a triangle move on fixed straight lines, and the three sides pass through three fixed points, which lie on a straight line; find the locus of the third vertex.
9. Any quadrilateral is divided by a straight line into two others; prove that the intersections of the diagonals of the three lie in a straight line.
10. The radical axes of each pair of a system of three circles meet in a point.
11. To describe a circle touching three given circles.
12. If through any point inside or outside a circle secants be drawn, the straight lines joining the extremities of the chords intersect on the polar of that point.

## SECOND YEAR EXHIBITIONS, 1895.

## THEORY OF EQUATIONS—ALGEBRA.

MONDAY, SEPTEMBER 23RD :—MORNING, 9 TO 12.

*Examiner*, ..... ALEX. JOHNSON, M.A., LL.D.*Assistant Examiner*, ... H. M. TORY, B.A.

*Write the answers in separate books marked A and B respectively to correspond to the questions.*

## A.

1. Form the equation whose roots are the squares of the roots of

$$x^3 + p x^2 + q x + r = 0$$

2. Investigate Cardan's solution of the cubic equation.
3. Find the three cube roots of unity.

4. If we substitute successively for  $x$  in  $f(x)$  two quantities which include between them an odd number of roots of the equation  $f(x) = 0$ , the results are of contrary signs.

5. Resolve into partial fractions  $\frac{x^2 + 15}{(x-1)(x^2 + 2x + 5)}$

6. State the principle of Indeterminate Coefficients, and apply it to find the value of  $z$  in a series of ascending powers of  $x$  from the equation

$$z^3 - 3z + x = 0$$

B.

7. (a) Find the equation whose roots are the reciprocals of those of the equation  $x^5 + 4x^3 - x^2 + 11 = 0$ .

(b) Transform the equation  $x^4 + x^3 - x - 5 = 0$  to one which shall want the second term.

8. If in any equation each negative coefficient be taken positively, and divided by the sum of all the positive coefficients which precede it, the greatest quotient thus formed increased by unity is a superior limit of the positive roots.

9. Find by Sturm's theorem the situation of the real roots of the equation  $x^3 - 7x + 7 = 0$ .

10. Solve the equation (a)  $x^5 - 1 = 0$

$$(b) x^3 + px + q = 0$$

11. Find by means of the Binomial Theorem the cube root of 126 to 4 places of decimals.

12. Expand  $a^x$  in ascending powers of  $x$ .

## EXHIBITION AND SCHOLARSHIP EXAMINATIONS.

## SECOND YEAR GERMAN.

## DONALDA DEPARTMENT.

SEPT. 17TH, 1895 :—MORNING, 9 TO 12.

*Examiner*, ..... L. R. GREGOR. B.A.

## 1. Translate the following passages into English :

## (a) Der Neffe als Onkel.

CHAMPAGNE.—Sie sollen mit mir zufrieden sein — In wenig Augenblicken werde ich damit als Kourier von Straszburg ankommen, gespornt und gestieft, triefend von Schweisz.—Sie, gnädiger Herr, halten sich wacker.—Mut, Dreistigkeit, Unverschämtheit, wenn's nötig ist.—Den Onkel gespielt, die Tante angeführt, die Nichte geheiratet, und, wenn alles vorbei ist, den Beutel gezogen und den redlichen Diener gut bezahlt, der Ihnen zu allen diesen Herrlichkeiten verholffen hat.

## (b) Der Geisterscher.

Ober verunglückt oder gestohlen oder auch entlaufen war, wusste niemand. Zu dem letztern war gar kein wahrscheinlicher Grund vorhanden, weil er jederzeit ein stiller und ordentlicher Mensch gewesen, und nie ein Tadel an ihm gefunden war. Alles, worauf seine Kameraden sich besinnen konnten, war, dasz er in der letzten Zeit sehr schwermütig gewesen und, wo er nur einen Augenblick erhaschen konnte, ein gewisses Minoritenkloster in der Giudicca besucht habe, wo er auch mit einigen Brüdern öfters Umgang gepflegt. Dies brachte uns auf die Vermutung, dasz er vielleicht in die Hände der Mönche geraten sein möchte und sich katholisch gemacht hätte; und weil der Prinz über diesen Artikel damals noch sehr tolerant oder sehr gleichgiltig dachte, so liesz er's nach einigen fruchtlosen Nachforschungen dabei bewenden.

## (c) Die Kraniche des Ibykus.

“ Und glaubt er fliehend zu entspringen,  
Geflügelt sind wir da, die Schlingen  
Ihm werfend um den flücht' gen Fuß,  
Dasz er zu Boden fallen musz.  
So jagen wir ihn, ohn' Ermatten,



Versöhnen kann uns keine Reu',  
Ihn fort und fort bis zu den Schatten  
Und geben ihn auch dort nicht frei."

(d) Egmont's Leben und Tod.

Beide Grafen waren der beleidigten Majestät schuldig erkannt, weil sie die abscheuliche Verschwörung des Prinzen von Oranien begünstigt und befördert, die conföderirten Edellente in Schutz genommen, und in ihren Statthalterschaften und andern Bedienungen dem Könige und der Kirche schlecht gedient hätten. Beide sollten öffentlich enthauptet, ihre Köpfe auf Spiesze gesteckt und ohne ausdrücklichen Befehl des Herzogs nicht abgenommen werden. Alle ihre Güter, Lehen und Rechte waren dem königlichen Fiscus zugesprochen. Das Urtheil war von dem Herzog allein und dem Sekretär Pranz unterzeichnet, ohne dasz man sich um die Beistimmung der übrigen Criminalräthe bemüht hätte.

2. Translation at sight.

Translate:—

Am folgenden Nachmittag wanderten Reinhardt und Elisabeth jenseits des Sees bald durch die Hölzung, bald auf dem vorspringenden Uferande. Elisabeth hatte von Erich den Auftrag erhalten, während seiner und der Mutter Abwesenheit Reinhardt mit den schönsten Aussichten der nächsten Umgegend, namentlich von der andern Uferseite auf den Hof selber, bekannt zu machen. Nun gingen sie von einem Punkt zum andern. Endlich wurde Elisabeth müde, und setzte sich in den Schatten überhängender Zweige, Reinhardt stand ihr gegenüber, an einen Baumstamm gelehnt; da hörte er tiefer im Walde den Kuckuck rufen, und es kam ihm plötzlich, dies Alles sei schon einmal eben so gewesen.

3. Translate into German:

(a) Will you come with me next Sunday morning to the German church? The new parson is very much liked. He has a very good delivery. You can hear every word he says, and his accent is agreeable. I should say he comes from the neighborhood of Hanover. I have known a great many Hanoverians. I suppose it is prejudice, but I enjoy hearing them talk. The South Germans have so much dialect, even the educated among them.

(b) SOPHIA.—Look at these bonnets, father. My aunt brought them to me.

MADAME DE MIRVILLE.—You are right, Sophia, in getting your uncle's advice. He understands the matter and will help you to choose. But, pray, why are you hurrying away?

SOPHIA.—I must put everything in order before the others arrive. I will come back in a moment. There is not very much to do. I almost finished my preparations this morning.

4. Translate:—

(a) Lassen Sie sich nichts weisz machen, (b) stehenden Fuszes, (c) diese Gedanken sollte er sich nur vergehen lassen, (d) er ist Knall und Fall sterblich in dich verliebt worden. (e) Der gnädige Herr wollten mich in meinem Hause nicht erwarten. Dieses Billet lieszen mich Hochdieselben zurück. Belieben Ihre Gnaden es zu durchlesen. (f) Es lag mir viel daran dich zu sprechen. (g) Sie hält was auf mich. (h) Wie hübsch spielt sich's den Vater! (i) Mein Bruder lässt sehr bedauern.

5. Parse the strong verbs in question No. 2.

6. Der Fremde meint es müsse dort still sein und die Menschen müszten schweigen. Explain carefully mood and tense of the verb in the above subordinate clauses.

7. (a) What is the proper position in a sentence of attributive participles? Translate: The house standing on a hill. (b) State the position and order of adverbs in a sentence.

8. Give the first person singular imperfect indicative of the following verbs as employed in a principal sentence: bekennen, anerkennen, veranstalten, entgegenkommen, übersetzen (translate), teilnehmen beauftragen, verstellen, vorstellen.

9. Construct German sentences exemplifying: (a) an intransitive verb followed by a cognate accusative, (b) the adverbial accusative.

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HIGHER ENTRANCE EXAMINATION AND SECOND YEAR  
EXHIBITIONS, 1895.

## ENGLISH GRAMMAR.

THURSDAY, SEPT. 19TH:—MORNING, 9 TO 12.

*Examiner*,..... CHAS. E. MOYSE, B.A.

## HIGHER ENTRANCE EXAMINATION.

1. "The English orthographical system has many imperfections." Give proofs of this statement.

2. When is the inflection *es* used to form the plural of nouns?

3. Give the inflections of the personal pronouns of the first and second persons, of the demonstrative pronoun of the third person, and of the possessive adjective pronouns. Write a paragraph on the use of certain forms you have written, and another on the origin of such forms as are worth noticing.

4. "The tenses of the English verb are made partly by inflection, partly by the use of auxiliary verbs." Illustrate this statement. Conjugate *can*, *shall*, *ought*, *dare*; give their meanings and uses, and their origin; make notes on interesting forms.

5. Classify adverbs. Give adverbs derived from nouns, adjectives and pronouns, and explain their forms.

6. Show that a general idea underlies the meanings of *by* in: To put a thing *by*; to swear *by* an altar; to arrive *by* ten o'clock; day *by* day; Abel was killed *by* Cain. Treat "to buy *of* you, to cure *of* fever, to smell *of* musk, a piece *of* cheese, tempted *of* the devil, to die *of* a broken heart, to speak *of* Cicero," in the same manner.

7. How are compound adjectives and compound verbs formed?

8. Analyse:

I wandered lonely as a cloud  
That floats on high o'er vales and hills,  
When all at once I saw a crowd,  
A host of golden daffodils,  
Beside the lake, beneath the trees  
Fluttering and dancing in the breeze.

## ENGLISH COMPOSITION AND ESSAY.

1. Explain the meaning of the following, and give an example of each: Synecdoche, Circumlocution, Colloquialism, Vulgarism, Pleonasm, Periodic Sentence.

2. What are the arguments in favor of a simple style for ordinary everyday purposes? How is such simplicity attained?

3. Correct the following:—

- (a) He claims that the affair should be ended.
  - (b) I did not have the advantage of seeing him.
  - (c) Those sort of books are useless.
  - (d) When a person is tired they should rest.
- Give reasons for the corrections.

4. Describe fully any *one* of the following:

- 1. A familiar landscape.
- 2. A familiar personage.
- 3. The feelings of a candidate for examination.

## SECOND YEAR EXHIBITIONS.

### ENGLISH GRAMMAR.

(Candidates will answer the questions of the Higher Entrance Examination, together with the following:)

9. Write on the influence of Latin on English.

10. Give the etymology of bandog, gospel, lammas, nostril, orchard. What changes has a final guttural undergone in English? Show that some noun suffixes of Teutonic origin had independent meanings.

11. Write a short essay on Comparative Philology.

## SECOND YEAR EXHIBITIONS, 1895.

### ENGLISH LITERATURE.

MONDAY, SEPT. 23RD :—AFTERNOON, 2 TO 5.

Examiners, ..... { PAUL T. LAFLEUR, M.A.  
CHAS. W. COLEY, PH.D.

(N.B.—Write the answers to A and B in different books, and your name on the outside of each.)

A.

SHAKSPERE. *As you Like It*.

1. Summarize the events contained in Act III.

2. "Rosalind is the leading and most interesting character in the play." Discuss this judgment, and support your own opinion with the help of quotation.

3. Explain :—that they call compliment is like the encounter of two dog apes ; I was never so be-rimed since Pythagoras' time ; worse than Jove in a thatched house ; It is not the fashion to see the lady the epilogue.

4. What is the evidence, direct or indirect, towards establishing the date of the play of *As you Like It* ?

B.

TRENCH. *Study of Words.*

1. What has Trench to say concerning the language of savage tribes ?
2. Show how errors have perpetuated themselves in words.
3. Give the original meaning of *tawdry*, *sacrament*, *miscreant*, *haleyon*, *church*.

### CONCOURS POUR LES BOURSES ET PRIX DE 2<sup>e</sup> ANNEE.

Le 20 SEPT., 1895 :—De 9 h. à midi.

*Examineur*, ..... M. INGRES.

1. Dictée.
2. Reproduire, textuellement si possible, une fable de La Fontaine.
3. Ecrire une vingtaine de lignes sur l'Avare.
4. Indiquer l'emploi du Subjonctif. Donner six exemples.
5. Nommer les animaux domestiques et les services qu'ils rendent à l'homme.
6. Traduire le passage suivant :—

About the age of four I learned to read by a simple process. I had heard the elegy of Cock Robin till I knew it by rote, and I picked out the letters and words which compose that classic, till I could read it for myself. Earlier than that, "Robinson Crusoe" had been read aloud to me, in an abbreviated form, no doubt. I remember the pictures of Robinson finding the footstep in the sand, and a dance of cannibals, and the parrot. But, somehow, I have never read "Robinson" since ; it is a pleasure to come.

*Andrew Lang.*

Dater en toutes lettres.



## SECOND YEAR EXHIBITIONS, 1895

## CHEMISTRY.

THURSDAY, SEPT. 19TH :—AFTERNOON, 2 TO 5.

*Examiner*, ..... B. J. HARRINGTON, M A., PH.D.

1. What weights of Copper and Nitric Acid would be required to make 750 cc. of Nitric Oxide at 20 ° C. and 740 mm.?
2. Give the preparation and properties of Carbon Monoxide.
3. What takes place when excess of Chlorine is passed into a warm concentrated solution of Caustic Potash? Write the equation.
4. Point out the principal analogies existing between the compounds of Nitrogen, Phosphorus and Arsenic.
5. Describe the preparation and properties of Hydrocyanic Acid.
6. Give the names and formulæ of the Oxy-acids of Phosphorus.
7. What weight of crystallized Ferrous Sulphate can be obtained by the slow oxidation of 20 tons of Pyrites containing 38 per cent. of Sulphur?
8. Give the formulæ, preparation and properties of the two Chlorides of Mercury.
9. What is a compound radical? Give examples of some of the more important ones.
10. State what you know with regard to the principal compounds of either Manganese or Chromium.

## GREEK.

## CLASSICAL SCHOLARSHIPS.

TUESDAY, SEPT. 17, 1895 :—9 TO 12 A.M.

*Examiner*, ..... PRINCIPAL PETERSON, LL.D.

1. Translate :—*Apologia Socratis XVIII. D*

(α) νῦν οὖν, ὦ ἄνδρες Ἀθηναῖοι, πολλοῦ δέω ἐγὼ ὑπὲρ ἐμαυτοῦ ἀπολογεῖσθαι, ὥς τις ἂν οἶοιτο, ἀλλ' ὑπὲρ ὑμῶν.

αὐτὴν ἑξαμάρτητε περὶ τὴν τοῦ θεοῦ ἐδόσαν ὑμῖν ἐμοῦ κατα-  
ψηφισάμενοι. εἰ γὰρ ἐμὲ ἀποκτείνητε, οὐ ῥαδίως ἄλλον  
τοιούτον εὐρήσετε, ἀτεχνῶς, εἰ καὶ γελιότερον εἰπεῖν,  
προσκαίμενον τῇ πόλει ὑπὸ τοῦ θεοῦ, ὥσπερ ἵπτω μεγά-  
λῳ μὲν καὶ γενναίῳ ὑπὸ μεγέθους δὲ νωθεστέῳ καὶ δεομέ-  
νῳ ἐγείρεσθαι ὑπὸ μύωπός τινος· οἷον μοι δοκεῖ ὁ θεὸς ἐμὲ  
τῇ πόλει προστεθεικέναι τοιούτον τινα, ὃς ὑμᾶς ἐγείρων  
καὶ πείθων καὶ οὐειδίζων ἓνα ἕκαστον οὐδὲν παύομαι τὴν  
ἡμέραν ὅλην πανταχοῦ προσκαθίζων. τοιοῦτος οὖν ἄλλος  
οὐ ῥαδίως ὑμῖν γενήσεται, ὧ ἄνθρωποι, ἀλλ' εἰν ἐνοὶ πείθησ-  
θε, φείσεσθέ μου· ὑμεῖς δ' ἴσως τάχ' ἂν ἀχθόμενοι, ὥσπερ  
οἱ νυστάζοντες ἐγειρόμενοι, κρούσαντες ἂν με, πειθόμενοι  
Ἀνύτῳ, ῥαδίως ἂν ἀποκτείναιτε, εἰτα τὸν λοιπὸν βίον κα-  
θεύδοντες διατελοῖτ' ἂν, εἰ μὴ τινα ἄλλον ὁ θεὸς ὑμῖν  
ἐπιπέμφει κηδόμενος ὑμῶν.

#### Crito XIII. E.

(b) ὃς δ' ἂν ὑμῶν παραμείνῃ, ὁρῶν ὃν τρόπον ἡμεῖς τάς  
τε δίκας δικάζομεν καὶ τὰλλα τὴν πάλιν διοικοῦμεν, ἤδη  
φάμεν ταῦτα ὁμολογητέα ἔργῳ ἡμῖν ἢ ἂν ἡμεῖς κελεύω-  
μεν ποιήσῃν ταῦτα, καὶ τὸν μὴ πειθόμενον τριχῇ φάμεν  
ἀδικεῖν, ὅτι τε γεννηταῖς οὖσιν ἡμῖν οὐ πείθεται, καὶ ὅτι  
τροφεύῃσι, καὶ ὅτι ὁμολογήσας ἡμῖν πείθεσθαι οὔτε πείθε-  
ται οὔτε πείθει ἡμᾶς, εἰ μὴ καλῶς τι ποιούμεν, προτιθέν-  
των ἡμῶν καὶ οὐκ ἀγρίως ἐπιταττόντων ποιεῖν ἢ ἂν κελεύ-  
ωμεν, ἀλλὰ ἐφίεντων δυοῖν θάτερον, ἢ πείθειν ἡμᾶς ἢ  
ποιεῖν τούτων οὐδέτερα ποιεῖ.

#### Crito VII. C D.

ΣΩ· (c) Καλῶς λέγεις. οὐκοῦν καὶ τὰλλα, ὧ Κρίτων,  
οὕτως, ἵνα μὴ πάντα διώμεν, καὶ δὴ καὶ περὶ τῶν δικαίων  
καὶ δίκων καὶ αἰσχυρῶν καὶ ἀγαθῶν καὶ κακῶν, περὶ ὧν  
καὶ ἡ βουλὴ ἡμῖν ἐστὶ, πόττερον τῇ τῶν πολλῶν δόξῃ δεῖ

ἡμῖς ἔπεσθαι καὶ φοβεῖσθαι αὐτήν, ἢ τῇ τοῦ ἐνός, εἴ τίς ἵσταν ἐπαίειν, ὃν δεῖ καὶ αἰσχύνεσθαι καὶ φοβεῖσθαι μᾶλλον ἢ ξύμπαντας τοὺς ἄλλους : ᾧ εἰ μὴ ἀκολουθήσομεν, διαφθερούμεν ἐκεῖνο καὶ λωβησόμεθα, ὃ τῷ μὲν δίκαιῳ βελτίον ἐγύγνετο, τῷ δὲ ἀδίκῳ ἀπώλλυτο. ἢ οὐδέν ἐστι τοῦτο;

## 2. Translate, Demosthenes, Olynthiacs I.

καὶ ἔμοιγε δοκεῖ τις ἂν, ὃ ἄνδρες Ἀθηναῖοι, δίκαιος λογιστὴς τῶν παρὰ τῶν θεῶν ἡμῖν ὑπηρεγμένων καταστάς, καὶ περ οὐκ ἐχόντων ὥς δεῖ πολλῶν, ὅμως μεγάλην ἂν ἔχειν αὐτοῖς χάριν. εἰκότως. τὸ μὲν γὰρ πολλὰ ἀπολωλέκεναι κατὰ τὸν πόλεμον τῆς ἡμετέρας ἀμελείας ἂν τις θεΐη δικάως, τὸ δὲ μήτε πάλαι τοῦτο πεπονθέναι, πεφνηέναι τέ τινα ἡμῖν συμμαχίαν τούτων ἀντίρροπον, ἂν βουλώμεθα χρῆσθαι, τῆς παρ' ἐκείνων εὐνοίας εὐεργέτημ' ἂν ἔγωγε θεΐην. ἀλλ', οἶμαι, παρόμοιον ἐστίν, ὅπερ καὶ περὶ τῆς τῶν χρημάτων κτήσεως· ἂν μὲν γὰρ, ὅσα ἂν τις λάβῃ, καὶ σῶσῃ μεγάλην ἔχει τῇ τύχῃ τὴν χάριν. καὶ περὶ τῶν πραγμάτων οὕτως· οἱ μὴ χρησάμενοι τοῖς καιροῖς ὀρθῶς, οὐδ' εἰ συνέβῃ τι παρὰ τῶν θεῶν χρηστὸν. μνημονεύουσι· πρὸς γὰρ τὰ τελευταῖα ἐκβάν ὁλοστον τῶν προὔπαρξάντων ὥς τὰ πολλὰ κρίνεται.

## Demosthenes, Olynthiacs III.

(b) τί δὴ τὸ πάντων αἴτιον τούτων, καὶ τί δήποτε ἅπαντ' εἶχε καλῶς τότε, καὶ νῦν οὐκ ὀρθῶς ; ὅτι τὸ μὲν πρῶτον καὶ στρατεύεσθαι τολμῶν αὐτὸς ὁ δῆμος δεσποτίας τῶν πολιτευομένων ἦν, καὶ κύριος αὐτὸς ἀπάντων τῶν ἀγαθῶν, καὶ ἀγαπητὸν ἦν παρὰ τοῦ δήμου τῶν ἄλλων ἐκάστω καὶ τιμῆς καὶ ἀρχῆς καὶ ἀγαθοῦ τινος μεταλαβεῖν· νῦν δὲ τοῦναντίον κύριοι μὲν τῶν ἀγαθῶν οἱ πολιτευόμενοι, καὶ διὰ τού-

τῶν ἅπαντα πράττεται, ὑμεῖς δ' ὁ δῆμος, ἐκνευρισμένοι καὶ περιηρημένοι χρήματα καὶ συμμάχους, ἐν ὑπηρετῶν καὶ προσθήκης μέρει γεγένησθε, ἀγαπῶντες, ἐὰν μεταδιδῶσι θεωρικῶν ὑμῖν ἢ βοῖδια πέμψωσιν οὗτοι καὶ, τὸ πάντων ἀνανδρότατον, τῶν ὑμετέρων αὐτῶν χάριν προσοφειλετε οἱ δ' ἐν αὐτῇ τῇ πόλει καθείρξαντες ὑμᾶς ἐπάγουσιν ἐπὶ ταῦτα καὶ τιθασσεύουσι χειροῖς αὐτοῖς ποιοῦντες.

3. Translate, Thucydides VI., chaps. 31-78.

(a) οὗτος δὲ ὁ στόλος ὡς χρόνιος τε ἐσόμενος καὶ κατ' ἀμφοτέρα, οὐ ἂν δέη, καὶ ναυσὶ καὶ πεζῷ ἅμα ἔξαρτυθεῖς, τὸ μὲν ναυτικὸν μεγάλαις δαπάναις τῶν τε τριηράρχων καὶ τῆς πόλεως ἐκπονηθέν, τοῦ μὲν δημοσίου δραχμὴν τῆς ἡμέρας νῶ ναύτῃ ἐκάστῳ διδόντος καὶ ναῦς παρασχόντος κενὰς ἐξήκοντα μὲν ταχείας τεσσαράκοντα δὲ ὀπιταγωγούς, καὶ ὑπηρεσίας ταύταις τὰς κριτίστας τῶν τριηράρχων, ἐπιφοράς τε πρὸς τῷ ἐκ δημοσίου μισθῷ διδόντων τοῖς θρανίοις τῶν ναυτῶν καὶ ταῖς ὑπηρεσίαις, καὶ τὰλλα σημείοις καὶ κατασκευαῖς πολυτελέσι χρησαμένων, καὶ ἐς τὰ μακρότατα προθυμηθέντος ἐνὸς ἐκαστοῦ ὅπως αὐτῷ τινὶ εὐπρεπεῖα τε ἢ ναὺς μάλιστα προέξει καὶ τῷ ταχυναυτεῖν, τὸ δὲ πεζὸν καταλόγοις τε χρηστοῖς ἐκκριθὲν καὶ ὅπλων καὶ τῶν περὶ τὸ σῶμα σκευῶν μεγάλῃ σπουδῇ πρὸς ἀλλήλους ἀμίλληθην. ξυνέβη δὲ πρὸς τε σφᾶς αὐτοὺς ἅμα ἔρην γενέσθαι, ὥς τις ἕκαστος προσετάχθη, καὶ ἐς τοὺς ἄλλους Ἕλληνας ἐπίδειξιν μᾶλλον εὐκασθῆναι τῆς δυνάμεως καὶ ἐξουσίας ἢ ἐπὶ πολεμίοις παρασκευῇ.

(b) εἴ τέ τις φθονεῖ μὲν ἢ καὶ φοβεῖται (ἀμφοτέρα γὰρ ταῖσι πάσχει τὰ μείζω), διὰ δὲ αὐτὰ τὰς Συρακούσας κακωθῆναι μὲν ἵνα σωφρομισθῶμεν βούλεται. περιγενέσθαι δὲ ἔνεκα τῆς αὐτοῦ ἀσφαλείας, οὐκ ἀνθρωπίνης δυνάμεως βούλησιν· οὐ γὰρ οἶόν τε ἅμα τῆς τε ἐπιθυμίας καὶ τῆς τύχης τὸν αὐτὸν ὁμοίως ταμίαν γενέσθαι. καὶ εἰ γνώμη ἀμάρτοι, τοῖς αὐτοῦ κακοῖς ὀλοφυρθεῖς τάχ' ἂν ἴσως καὶ τοῖς ἐμοῖς ἀγαθοῖς ποτὲ βουλευθείη αἰθις φθοιῆσαι. ἀδύ-

νατον δὲ προεμένω καὶ μὴ τοὺς αὐτοὺς κινδύνους, οὐ περὶ τῶν ὀνομάτων ἀλλὰ περὶ τῶν ἔργων, ἐθελήσαντι προσλαβεῖν λόγῳ μὲν γὰρ τὴν ἡμετέραν δύναμιν σωζοι ἂν τις, ἔργῳ δὲ τὴν αὐτοῦ σωτηρίαν.

5. (1) Give some account of the jury and of the verdict in the trial of Socrates.

(2) Sketch the early life of Demosthenes, and give as accurate an abstract as you can of the Third Olynthiac.

(3) Mark on a sketch map the chief Greek cities in Sicily, stating the section of the Greek race to which each belonged.

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CLASSICAL SCHOLARSHIPS.

TRANSLATION AT SIGHT AND LATIN COMPOSITION.

TUESDAY, SEPTEMBER 17TH, 1895 :—AFTERNOON, 2 to 5.

Examiner, ..... A. JUDSON EATON, M.A., F.H.D.

A.

Tum Pontius: "nec ego istam deditionem accipiam" inquit, "nec Samnites ratam habebunt. quin tu, Spuri Postumi, si deos esse censes, aut omnia inrita facis aut pacto stas? Samniti populo omnes, quos in potestate habuit, aut pro iis pax debetur. sed quid ego te appello, qui te captum victori cum qua potes fide restituis? populum Romanum appello, quem si sponsionis ad furculas Caudinas factae paenitet, restituat legiones intra saltum, quo saepae fuerunt. nemo quemquam deceperit, omnia pro infecto sint, recipiant arma, quae per pactionem tradiderunt, redeant in castra sua, quidquid pridie habuerunt, quam in colloquium est ventum, habeant: tum bellum et fortia consilia placeant, tum sponsio et pax repudietur. ea fortuna, iis locis, quae ante pacis mentionem habuimus, geramus bellum, nec populus Romanus consulum sponsionem nec nos fidem populi Romani accusemus. numquamne causa defiet, cur victi pacto non stetis? obsides Porsinnae dedistis: furto eos subduxistis; auro civitatem a Gallis redemistis: inter accipiendum aurum caesi sunt; pacem nobiscum pepigistis, ut legiones vobis captas restitueremus: eam pacem inritam facitis. et semper aliquam fraudi speciem iuris inponitis. non probat populus Romanus ignominiosa pace legiones servatas?



pacem sibi habeat, legiones captas victori restituat : hoc fide, hoc rebus, hoc fœtialibus, caerimoniis dignum erat. ut quidem tu quod petisti per pactionem habeas, tot cives incolumes, ego pacem, quam hos tibi remittendo pactus sum, non habeam, hoc tu, A. Corneli, hoc vos, fœtiales, iuris gentibus dicitis ? ego vero istos, quos dedi simulatis, nec accipio nec dedi arbitror, nec moror, quo minus in civitatem obligatam sponsione commissa iratis omnibus diis, quorum eluditur numen, redeant. gerite bellum, quando Sp. Postumius modo legatum fœtiale genu perculit. ita dii credent Samnitum civem Postumium, non civem Romanum esse, et a Samnite legatum Romanum violatum : eo vobis iustum in nos factum, esse bellum. hæc ludibris religionum non pudere in lucem proferre, et vix pueris dignas ambages senes ac consulares fallendæ fidei exquirere ! i. hictor, deme vincla Romanis : moratus sit nemo, quo minus, ubi visum fuerit, abeant."

B.

Scipio, finding that the open plains were not a suitable battle-field for the Romans, on account of the superiority of the Carthaginian cavalry hastened across the Po to Placentia. Occupying a strong position there, he waited until his colleague arrived from Sicily. Sempronius had already sent his troops to Ariminum ; thence he marched to the Trebia, where he effected a junction with Scipio. Hannibal was eager to force the battle while the better of the Roman generals was disabled by a wound, and resolved to lure the impetuous and headstrong Sempronius to an engagement. By ordering the Numidian cavalry to cross the Trebia and discharge missiles at the sentries, and then to retreat gradually, he drew the Roman army after him across the river. It was towards mid-winter, and the day was cold, and snow filled the air. The Romans, pursuing the retreating Numidians, had to wade breast-deep through the icy stream, as the piercing sleet blew in their faces. The men, numbed with cold, tired and hungry, for they had marched hurriedly out without their breakfast, were obliged to face the Carthaginians, who had made their limbs supple with oil, and leisurely enjoyed their morning meal. In the battle that followed, the Romans met with a crushing defeat.

#### CLASSICAL SCHOLARSHIPS, 1895.

##### LATIN.

WEDNESDAY, SEPTEMBER 18TH, 1895 :—MORNING, 9 TO 12.

*Examiner*,..... A. JUDSON EATON, M.A., PH.D.

1. Translate : (a) Livy Bk. XXI, 61, *Præquam certa.....cum classe cecidit* ; (b) Bk. XXII., ch. 41, *Ceterum temeritati.....militum esse*.

2. Give the meaning and derivation of *excidium*, *anceps*, *prætor*, *triumviri*, *interrogativa*, *stipendium*, *cæmenta*, *populus*.

3. Define the terms: *coloniae*, *praetorium*, *ballista*, *contio*, *supplicatio*.

4. Write a note on the grammatical construction of italicized words or phrases: (a) *Castris*, nisi quantum usus necessarii *cogerent*, tenebatur miles. (b) Fabius medius inter hostium agmen urbemque Romam *iugis* ducebat. (c) Quod satis in usum fuit, *sublato*, ceterum omne incensum est. (d) Sed qui vere *dicionis imperique Romani* facti sint obsidibus datis, populi amplius fuerunt centum viginti.

5. Translate: Horace, Epistles, Bk. I., Ep. XIII.

6. Write a brief life of Horace. Discuss the character of his epistles, their style, matter, and date of composition.

7. Translate: Sallust, Catiline, § 20, *Catilina*. ubi eos..... *amicitie* est.

8. Comment on the meaning of the following phrases: domi militiaeque; quaestor pro praetore; consul designatus. Also on the following modes of expression: adepta libertate; se quisque hostem ferire properabat; concordia maxima, minima avaritia erat.

9. Enumerate some of the peculiarities of Sallust's style.

10. Translate: Cicero, Selected Letters.

(a) Quod te cum Culleone scribis de privilegio locutum, est aliquid, sed multo est melius abrogari: si enim nemo impedit, quid est firmius? sin erit, qui ferri non sinat, idem senatus consulto intercedet. Nec quicquam aliud opus est abrogari: nam prior lex nos nihil laedebat; quam si, ut est promulgata, laudare voluissemus aut, ut erat negligenda, negligere, nocere omnino nobis non potuisset. Hic mihi primum meum consilium defuit, sed etiam obfuit. Caeci, caeci, inquam, fuimus in vestitu mutando in populo rogando, quod, nisi nominatim mecum agi coeptum esset, fieri perniciosum fuit. Sed pergo praeterita; verum tamen ob hanc causam, ut, si quid ageretur, legem illam, in qua popularia multa sunt, ne tangatis.

(b) De ambitu cum atrocissime ageretur in senatu multos dies, quod ita erant progressi candidari consulares, ut non esset ferendum, in senatu, non fui: statui ad nullam medicinam rei publicae sine magno praesidio accedere. Quo die haec scripsi, Drusus erat de praevaricatione a tribunis aerariis absolutus, in summa, quattuor sententiis, cum senatores et equites damnassent. Ego eodem die post meridiem Vatinius eram defensurus: ea res facilis est. Comititia in mensem Septembrem reiecta sunt. Scauri iudicium statim exercebitur, cui nos non deerimus. Συνοδείπρονς Σοφοκλέους, quamquam a te actam fabellam video esse festive, nullo modo probavi.

11. State clearly the principles of Syntax that explain the following forms: *sin* . . . *ihil, quam, voluissemus, coeptum esset, tangatis, ageretur, defensurus*.

12. (a) Define the meaning of *adfinis, unae litterae, duae litterae, binae litterae, consul designatus, tribunus aerarii*.

(b) Give the derivation and meaning of the following words: *ambitus, comitia, candidatus, praevaricatio, privilegium*.

13. Write out in full, and translate the following expressions:—

(a) M. Cicero S. D. C. Antonio M. F. IMP. (b) pr. Kal. Mai. (c) D. a. d. III. Non. Oct. (d) Diodotus mortuus est; reliquit nobis HS. fortasse centiens.

14. Translate: Virgil, *Georgics*, Bk. II., 259—275.

## CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

### ANCIENT HISTORY.

WEDNESDAY, SEPT. 18TH, 1895:—2 TO 5 P.M.

*Examiner*, ..... PRINCIPAL PETERSON, LL.D.

1. What is known concerning the origin of the Dorians, and the great Dorian Immigration?

2. Describe briefly the organization of the Spartan State.

3. Sketch the constitutional history of Athens in connection with the names of Solon, Pisistratus and Cleisthenes.

4. The causes and results of Athenian intervention in Sicily.

5. The rise and fall of Theban supremacy.

6. What events are associated with the following places:—Tanagra, Coronea, Delium, Amphipolis, Cyzicus, Arginusae, Aegospotami?

7. The character of the Kingly Government at Rome and the probable causes of its overthrow.

8. The wars of the early Republic, and the progress made in the external advance of Rome between 509 and 390 B.C.

9. The chief measures introduced before 390 B.C. for the social and political improvement of the Plebs. What is known of the authors of these measures, and at what time were they introduced?

10. Indicate the nature of the change in the position and aims of parties at Rome during the Republic

11. State the provisions of the most important laws proposed by Gaius Gracchus, with a sketch of the subsequent history of the Tribune.

12. The causes of the civil war between Caesar and Pompeius, with an estimate of the latter as a general and a statesman.

## SCIENCE SCHOLARSHIP EXAMINATIONS, 1895.

## MATHEMATICS

ANALYTIC GEOMETRY (*First Paper*).

TUESDAY, SEPT. 17TH :—MORNING, 9 TO 12.

*Examiner*,.....ALEXANDER JOHNSON, M.A., LL.D.

1. Define the *evolute* of a curve. Prove that the evolute of the ellipse is

$$\frac{x^{\frac{2}{3}}}{A^{\frac{2}{3}}} + \frac{y^{\frac{2}{3}}}{B^{\frac{2}{3}}} = 1$$

$$\text{where } A = \frac{a^2 - b^2}{a} \quad B = \frac{a^2 - b^2}{b}$$

2. Prove that the asymptotes of similar and similarly placed hyperbolas are parallel.

3. In the parabola the locus of the extremity of the perpendicular from the focus on the tangent is a right line.

4. The rectangle under the segments of a focal chord of an ellipse is proportional to the whole chord.

5. The rectangle under the focal perpendiculars on the tangent is constant, and equal to the square of the semi-axis minor.

6. If through any point  $O$  of a conic two chords be drawn, meeting the curve in the points  $R', R'', S', S''$ , then the ratio of the rectangles

$$\frac{OR' \cdot OR''}{OS' \cdot OS''}$$

will be constant, whatever be the position of the point  $O$ , provided that the directions of the lines  $OR, OS$  be constant.

7. Find the equation of the polar of a given point  $x_1 y_1$  with regard to the circle  $x^2 + y^2 = r^2$ . Show that if a point  $A$  lie on the polar of  $B$ , then  $B$  lies on the polar of  $A$ .

8. Find the equation of the tangent at any point to a conic given by the general equation.

9. What does a homogeneous equation of the  $n$ th degree in  $x$  and  $y$  represent? Prove your statement.

10. Given base and ratio of sides of a triangle, find the locus of the vertex.

11. Given base and difference of squares of sides of a triangle, find the locus of the vertex :—1° taking as axes the base and a perpendicular to it at one extremity ; 2° taking axes anywhere so as to get equations in the most general form.

12. Find the formula for the transformation of co-ordinates from one set of rectangular axes to another inclined at a given angle to the first.

## SCIENCE SCHOLARSHIPS.

### MATHEMATICS.

#### ANALYTIC GEOMETRY—(*Second Paper.*)

WEDNESDAY, SEPT. 18TH, 1895 :—MORNING, 9 TO 12.

*Examiner*,..... ALEX. JOHNSON, M.A., LL.D.

1. If  $S = 0$  be a conic, find the relation to it of the conic represented by  $S = k u^2$

2. What geometrical property of the conic  $\alpha \gamma = k \beta^2$  is indicated by the form of the equation.

3. Prove Pascal's Theorem for hexagon inscribed in a conic section deriving it from the equation  $\alpha \gamma = k \beta \delta$ .

4. Prove that the condition that two conics given by the general equation should be similar, even though not similarly placed.

5. Find the locus of the pole with respect to one conic of any tangent to another conic.

6. Find the co-ordinates of the centre of a conic given by the general equation. What is the condition that the centre should be at an infinite distance? How is the proposition that all diameters must pass through the centre modified in this case? Given any segment of a conic section on paper, how would you find the centre?



7. The equation of the circle circumscribing the triangle formed by the lines  $\alpha = 0$ ,  $\beta = 0$ ,  $\gamma = 0$ , is  $\beta \gamma \sin A + \gamma \alpha \sin B + \alpha \beta \sin C = 0$ .

(a) Give the geometrical interpretation of the above equation.

8. Given any number of points, if a right line be such that  $m'$  times the perpendicular on it from the first point  $+ m''$  times the perpendicular from the second point  $+ \&c. = 4$ , be constant, the line will always touch a circle.

9. Find the polar equation of the circle, and show from it that if from any point a line be drawn cutting a circle the rectangle under its segments is constant.

10. Verify that the following equation represents right lines.

11. The four lines  $\alpha = 0$ ,  $\alpha - k\beta = 0$ ,  $\beta = 0$ ,  $\alpha + k\beta = 0$  form an harmonic pencil.

12. Find the locus of a point  $P$ , if when perpendiculars  $PM$ ,  $PN$ , are let fall on two fixed lines, intersecting in  $O$ ,  $OM + ON$  is given.

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## SCIENCE SCHOLARSHIPS.

### MATHEMATICS.

#### DIFFERENTIAL AND INTEGRAL CALCULUS.

FRIDAY, SEPT. 20TH, 1895:—MORNING, 9 TO 12.

*Examiner*,.....ALEX. JOHNSON, M.A., LL.D.

1. Prove that the area of any focal sector of an ellipse can be expressed in terms of the focal distances of its extremities of the chord which joins them and of the axes of the curve.

2. Find the area of the surface generated by the revolution of an ellipse round its minor axis.

3. Show that the area of the surface generated by the revolution of a cycloid round its base is  $5\pi^2 a^3$ : where  $a$  is the radius of the generating circle of the cycloid.

4. Find the whole area of the curve  $a^2 z^2 = x^2 (2a - x)$ .

5. Investigate some one method for rationalizing the expression :

$$\frac{f(x)}{\phi(x)} \quad \frac{dx}{\sqrt[3]{a + 2bx + cx^2}}$$

6. Find the integrals

$$\int \frac{\cos^4 \theta \, d\theta}{\sin^3 \theta} ; \quad \int e^{ax} \sin^2 x \, dx, \quad \int x^4 \sin x \, dx.$$

7. Find the integrals :

$$\int \frac{d\theta}{\sin^3 \theta} ; \quad \int \cos^3 \theta \, d\theta ; \quad \int \frac{x^2 \, dx}{(a + ex^2)} ;$$

$$\int \frac{dx}{1 - x^2} ; \quad \int \frac{dx}{x^4 - 1} ; \quad \int \frac{x^2 \, dx}{\sqrt{1 - x^2}}$$

8. Find the value of  $\int_0^{\frac{\pi}{2}} \cos^2 x \, dx$

9. Find the radius of curvature at any point of the parabola  $x^2 = 4my$ .

10. If the equation be  $f(x, y) = u$ , or  $u = 0$ , prove that the equation of the tangent at  $x', y'$  is

$$(x' - x) \left( \frac{du}{dx} \right)' + (z' - z) \left( \frac{du}{dy} \right)' = 0.$$

11. Find the value of  $(\sin x)^{\tan x}$  when  $x = 0$ .

12. Find six terms of the development of  $\frac{e^x}{\cos x}$  in ascending powers of  $x$ .

13. If  $z = A \cos nx + B \sin nx$ , prove

$$\left( \frac{d^2}{dx^2} + n^2 \right) z = 0.$$

14. Expand  $\sin(x + z)$  by Taylor's Theorem.

15. Find by MacLaurin's Theorem, the first three terms in the expansion of  $\tan x$ .

## SCIENCE SCHOLARSHIPS.

## MATHEMATICS.

## ALGEBRA—TRIGONOMETRY.

MONDAY, SEPT. 23RD, 1895 :—MORNING, 9 TO 12.

*Examiner*,.....ALEX. JOHNSON, M.A., LL.D.

1. Prove that the square of a determinant is a symmetrical determinant.
2. A determinant is not altered if we add to each constituent of any row or column the corresponding constituents of any of the other rows or columns multiplied respectively by constant factors.
3. Calculate the determinant :

$$\begin{vmatrix} 25, & -15, & 23, & -5 \\ -15, & -10, & 19, & 5 \\ 23, & 19, & -15, & 9 \\ -5, & 5, & 9, & -5 \end{vmatrix}$$

4. Prove the binomial theorem for a fractional index.
5. Show by Sturm's theorem that the equation

$$x^3 - 6x^2 + 8x + 40 = 0$$

has only one real root.

6. If the roots of the equation

$$x^3 + 3px^2 + 3qx + r = 0$$

are in Harmonical Progression, prove that  $2q^3 = r(3pq - r)$ .

7. In a right angled spherical triangle, where  $C$  is the right angle, given  $c = 84^\circ 20'$   $A = 35^\circ 25'$ , find  $a$ .

8. In a spherical triangle given

$$a = 57^\circ 17' \quad b = 20^\circ 39' \quad c = 76^\circ 32', \text{ find } A.$$

9. In any spherical triangle prove

$$\sin \frac{A}{2} = \sqrt{\frac{\sin(s-b) \sin(s-c)}{\sin b \sin c}}$$

10. Find an expression for the area of a spherical triangle in terms of the three angles.

11. Prove

$$\cos 2A + \cos 2B + \cos 2C + \cos 2(A+B+C) = 4 \cos(A+B) \cos(B+C) \cos(C+A).$$

2. Find the exponential values of the sine and cosine of an angle.

## THIRD YEAR.

## CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS, 1895.

## ENGLISH LITERATURE.

THURSDAY, SEPT. 19TH :—AFTERNOON, 2 TO 3.30.

*Examiner*,..... CHAS. W. COLBY, M.A.

SPALDING :—English Literature (Chap. 6 to end).

1. Review the nature of dramatic poetry, and of the dramatic unities.
2. Write sketches of: (*a*) Joseph Addison; (*b*) Samuel Johnson.
3. Spalding links the names of Coleridge and Wordsworth. What has he to say of each?
4. Assign authors to the following works: *Leviathan*; *Task*; *Wealth of Nations*; *Revolt of Islam*; *Hind and Panther*; *Huilibras*.

(N.B.—The paper on Trench is the same as that set for the Second Year Exhibitions, and will be taken at the same time, viz., Monday, Sept. 23rd, at 2 p.m.)

## CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS, 1895.

THURSDAY, SEPT. 19TH :—9 TO 12 A.M.

*Examiner*,..... PAUL T. LAFLEUR, M.A.

## A.

MILTON: *Paradise Lost*, Books I. and II.

1. Give some account of the chief sources Milton is said to have used for the writing of *Paradise Lost*.
2. Give in outline the march of events contained in Bk. I.
3. Give at least five specimens of
  - (*a*) Miltonic phraseology.
  - (*b*) Miltonic construction.
4. Show by means of quotation: (*a*) Milton's profound knowledge of history; (*b*) his familiarity with Greek and Latin classics.

B.

SHAKSPERE: *The Tempest*.

1. On what grounds is it declared that this play is one of the latest of Shakspeare's writings?
2. Narrate the events contained in Act IV.
3. Sketch the character of Miranda, and quote from the play in support of your opinion.
4. *The Tempest* observes the Unity of Time. Explain the reference.

CONCOURS POUR LES BOURSES ET PRIX DE 3<sup>e</sup> ANNÉE.

Le 20 SEPT., 1895 :—De 9 h. à midi.

ÉCRIRE EN FRANÇAIS.

1. Diète.
2. Indiquer l'emploi de l'Imparfait du Passé Défini et du Passé Indéfini. Donner des exemples.
3. Écrire une vingtaine de lignes sur Les Femmes Savantes.
4. Raconter l'intrigue de Britannicus.
5. Traduire les passages suivants :—

(a) Imagination is the wing of the mind ; the understanding, its feet. With these it may climb high, but can never soar into that ampler ether and diviner air whence the eye dominates so uncontrolled a prospect on every hand. Through imagination alone is something like a creative power possible to man. It is the same in Æschylus as in Shakspeare, though the form of its manifestation varies in some outward respects from age to age. Being the faculty of vision, it is the essential part of expression also, which is the office of all art.

James Russell Lowell.

(b) *Snob* nous vient d'un livre de Thackeray, dont la traduction eut en France un succès énorme. Thackeray appelait de ce nom, *snob*, les pharisiens de son pays, ceux qui affectaient d'être en public très réguliers dans leur conduite ou dans leur propos, et qui se livraient tout bas et à huis clos à tous les dévergondages.

Le personnage de ce nom avait déjà chez nous un mot pour le qualifier : c'était celui d'hypocrite, ou encore celui de tartufe ; et quelquefois même pour marquer mieux cette espèce d'hypocrisie, on lui accolait l'épithète de pharisaïque.



Il semble que chez nous snob ait quelque peu perdu de son énergie primitive. Il désigne une sorte d'hypocrisie toute particulière.

Le snobisme est une pose, une affectation d'un sentiment que l'on n'éprouve pas, mais qu'il est de bon ton et de bon goût d'éprouver.

*Francisque Sarcey.*

Dater en toutes lettres.

### THIRD YEAR SCHOLARSHIPS, 1895.

#### LOGIC.

THURSDAY, 19TH SEPTEMBER:—MORNING, 9 TO 12.

*Examiners*,..... { J. CLARK MURRAY, LL.D.  
P. T. LAFLEUR, M.A.

1. What is the special object and function of Logic?
2. Explain and illustrate:—Connotation, Bifurcate Division, Ambiguity arising from etymology.
3. What is logical conversion? Explain the process in connection with A propositions.
4. Give the moods of the third figure; and reduce any two of these moods according to rule.
5. Explain the nature of the following fallacies, and give an original example of each:—Begging the question, Argumentum ad Hominem, post hoc ergo propter hoc.
6. Contrast Induction and Deduction, giving examples of each.
7. Write the rule of the Method of Difference, and give an *original* instance of its application.
8. What are the principal requisites of a philosophical language?

## SCIENCE SCHOLARSHIPS, 1895.

## CHEMISTRY.

THURSDAY, SEPT. 19TH:—AFTERNOON, 2 TO 5.

*Examiner*, ..... B. J. HARRINGTON, M.A., PH.D.

1. What weights of Quicklime and Sal-ammoniac would you employ to make 10 liters of Ammonia Gas at  $20^{\circ}$  C. and 750 mm.?

2. How would you prove experimentally that Carbon Dioxide contains its own volume of Oxygen?

3. What quantities of Salt, Sulphuric Acid and Manganese Dioxide would be required to make 25 liters of Chlorine at  $15^{\circ}$  C. and 740 mm.?

4. State what you know with regard to the Oxides and Acids of Phosphorus.

5. Describe the preparation of Silicon Tetra-fluoride and Hydro-fluosilicic Acid. Give equations.

6. Explain the hypothesis of LeBel and Van't Hoff concerning the different Lactic Acids.

7. What are Amines? Explain their classification as primary, secondary and tertiary, giving illustrations.

8. By what reactions can we pass from Marsh Gas to Ethyl Alcohol?

9. What substances are formed by the replacement of one atom of Hydrogen in Benzol by  $\text{N O}_2$ ,  $\text{N H}_2$ , and  $\text{O H}$ ? Briefly describe their preparation and properties.

10. Describe briefly the preparation and properties of each of the following bodies:—(1) Stannic Chloride, (2) Chromium Trioxide, (3) Potassium Permanganate, (4) Silver Nitrate.

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# FACULTY OF APPLIED SCIENCE.

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ENTRANCE EXAMINATIONS,  
1895.





# FACULTY OF APPLIED SCIENCE.

## EXHIBITION EXAMINATION.

### MATHEMATICS.

WEDNESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

*Examiner*, ..... G. H. CHANDLER, M.A.

1. Show that the subtangent of the logarithmic curve  $y = ax$  is constant and  $= \log_e a$ .

2. If  $u = \log_y x$ ,  $ax \frac{du}{dx} + y \frac{du}{dy} = 0$ .

3. Given the curve  $ay^2 = 3ax^2y + x^3$ ,

(1) Find the tangents at the origin,

(2) Find the radii of curvature at the origin.

4. In any plane triangle

$$da = \cos C db + \cos B dc + b \sin C dA.$$

5. How can you cut out from a given sphere the cone of greatest volume?

6. Show that

(1)  $\int \sin^2 \theta d\theta = -\cos \theta + \frac{2}{3} \cos^3 \theta - \frac{1}{5} \cos^5 \theta,$

(2)  $\int \frac{dx \sqrt{x^2 - a^2}}{x} = \sqrt{x^2 - a^2} - a \sec^{-1} \frac{x}{a}$

(3)  $\int \frac{2x dx}{1 + x + x^2 + x^3} = \log \frac{\sqrt{1+x^2}}{1+x} + \tan^{-1} x$

(4)  $\int x \tan^2 x dx = x \tan x + \log \cos x - \frac{1}{2} x^2.$

7. Show that the area between the curve  $y = x(1-x^2)$  and the axis of  $x$  is  $\frac{1}{2}$ .

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\* For Third Year only.

8. Show that the volume of the solid formed by revolving the area of the cycloid about the tangent at the vertex  $= 7 \pi^2 a^3$ .

9. Find the moment of inertia of a sphere with regard to a diameter.

10. What is the equation of a circle which touches the line  $3x + 2y = 10$  and has the point  $(5, 3)$  for centre?

11. Determine the condition that the line  $\frac{x}{m} + \frac{y}{n} = 1$  may touch the ellipse  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ .

\*12. A body is projected horizontally from a height  $h$  with a speed  $v$ ; prove that the equation of its path is

$$2 v^2 y = g x^2.$$

13. Show that the cylinder diameter of an engine which will produce  $n$  horse-power at a piston velocity of  $s$  feet per minute under a mean pressure of  $p$  pounds per square inch, is  $210 \sqrt{\frac{n}{p s}}$  inches nearly.

† For Fourth Year only.

## SECOND YEAR PRIZE EXAMINATION.

### MATHEMATICS.

WEDNESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiners,..... { G. H. CHANDLER, M.A.  
R. S. LEA, M.A.E.

1. A circle touches a given circle, and also passes through a fixed point; find the locus of its centre.

2. From a given point to draw a pair of tangents to a parabola.

3. Find the volume of a sphere.

4. When a straight line bisects the vertical angle of a triangle and meet the base, the rectangle contained by the sides is equal to the rectangle contained by the segments of the base, together with the square on the bisector.

5. If  $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$  prove that the square root of

$$\frac{a^5 b - 2 c^5 e + 3 a^4 c^3 e^2}{b^7 - 2 d^5 f + 3 b^4 c d^3 e^2}$$
 is equal to  $\frac{a c e}{b d f}$ .

6. Sum  $2n - \frac{1}{2}, 4n + \frac{1}{6}, 6n - \frac{1}{18}, \dots$  to  $2n$  terms.

7. Solve the equations

$$(1) \frac{x+3}{x+6} - \frac{x+6}{x+9} = \frac{x+2}{x+5} - \frac{x+5}{x+8},$$

$$(2) \begin{cases} 4(x^2 + y^2) = 17xy \\ x - y = 6 \end{cases},$$

$$(3) \sqrt{x} - \sqrt{x-8} = \frac{2}{\sqrt{x-8}}$$

$$(4) 2 \tan x + \sec^2 x = 2.$$

8. In any plane triangle

$$(1) \sin \frac{A}{2} = \sqrt{\frac{(s-b)(s-c)}{bc}},$$

$$(2) \frac{a-b}{a+b} = \frac{\tan \frac{1}{2}(A-B)}{\tan \frac{1}{2}(A+B)}.$$

9. In any spherical triangle

$$(1) \sin \frac{A}{2} = \sqrt{\frac{\sin(s-b) \sin(s-c)}{\sin b \sin c}},$$

$$(2) \frac{\tan \frac{1}{2}(a-b)}{\tan \frac{1}{2}(a+b)} = \frac{\tan \frac{1}{2}(A-B)}{\tan \frac{1}{2}(A+B)}.$$

10. Weights of 5, 4, 6, 2, 7, 3 are placed at the corners of a regular hexagon. Show that the centre of the hexagon is the centre of gravity.

# MATRICULATION EXAMINATION, 1895.

## MATHEMATICS (*First Paper*).

WEDNESDAY, SEPTEMBER 18TH:—MORNING, 9 TO 12.

N.B.—It is necessary to pass in each subject. All the work must be shown; answers alone will not be accepted.

## ARITHMETIC.

1. Assuming that the area of a circle is 3.1416 times the square on the radius, find in feet the diameter of a circle which has an area of one square mile.

2. (a) Calculate the simple interest on \$1500 for 15 months at 4 per cent. per annum. (b) Also find in what time a sum will double itself at 4 per cent. simple interest.

3. Assuming that a gallon of water weighs 10 lbs. or 4.536 kilograms, find the value of a litre in pints.

4. If the lines of your writing paper are 8 millimetres apart, what is the distance in inches?

## ALGEBRA.

5. Find the factors of (1)  $x^2 y^2 - 8xy - 65$ , (2)  $2 - 3x - 2x^2$ , (3)  $16x^2 - (3x + 1)^2$ , (4)  $a^2 + b^2 - c^2 - d^2 - 2(ab + cd)$ .

6. Reduce to its lowest terms the fraction

$$\frac{6x^3 + x^2 - 5x - 2}{6x^3 + 5x^2 - 3x - 2}.$$

7. Divide  $\frac{2}{x} - \frac{1}{a+x} + \frac{1}{a-x}$  by  $\frac{a+x}{a-x} - \frac{a-x}{a+x}$ .

and  $a^2 + 9b^2 + \frac{65b}{a^2 - 9b^2}$  by  $a + 3b + \frac{13b}{a - 3b}$ .

8. Solve the equations:

$$(1) \frac{1}{1+x} - \frac{1}{3-x} = \frac{6}{35}.$$

$$(2) \left\{ \begin{array}{l} \frac{x}{y} + \frac{y}{x} = \frac{5}{2} \\ \frac{x}{y} + y = 6 \end{array} \right\}.$$

$$(3) \left\{ \begin{array}{l} 2x + 3y = 5 \\ 2z - y = 1 \\ \frac{x}{4} - 6z = 3 \end{array} \right\}$$

9. The difference between any number of two figures and the number formed by reversing the figures is always divisible by 9; why is this true?

## MATRICULATION EXAMINATION, 1895.

MATHEMATICS (*Second Paper*).

WEDNESDAY, SEPTEMBER 18TH;—AFTERNOON, 2 TO 5.

## GEOMETRY.

1. Describe a parallelogram equal to a given rectilineal figure, and having an angle equal to a given angle.

. Describe a square equal to a given rectilineal figure.

(a) Divide a straight line into two parts, so that the rectangle contained by the parts may be equal to the square on a given line which is less than half the line to be divided.

3. The angles in the same segment of a circle are equal to one another.

4. Describe a circle about a given triangle.

(a) Why cannot a circle be described about a rhombus?

5. A straight line drawn parallel to one of the sides of a triangle cuts the other two sides proportionally.

6. A rectilineal figure on the hypotenuse of a right-angled triangle is equal to the sum of the similar and similarly described figures on the sides.

### TRIGONOMETRY.

7. Trace the change in the signs of the sine and tangent as the angle increases from  $0^\circ$  to  $360^\circ$ .

8. Find the sine and secant of  $30^\circ$ ,  $120^\circ$ ,  $300^\circ$ .

9. Determine the functions of the supplement of an angle in terms of those of the angle.

10. Prove that

$$(1) \sec^2 A = 1 + \tan^2 A,$$

$$(2) \cos A = \frac{\cot A}{\sqrt{1 + \cot^2 A}}$$

$$(3) \tan^2 A - \sin^2 A = \sin^2 A \sec^2 A,$$

$$(4) \sin (A - B) = \sin A \cos B - \cos A \sin B.$$

11. Given  $\sin \theta = \frac{3}{4}$ , calculate  $\sin 2\theta$  and  $\cos 2\theta$ .





FACULTY OF ARTS.

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SESSIONAL EXAMINATIONS.

1896.

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FACULTY OF ARTS.

GREEK.

THIRD YEAR.

LYSIAS :—*In Eratosthenem.*

PROSE COMPOSITION.

SATURDAY, NOV. 30, 1895:—1.30 TO 4 P.M.

*Examiner*,..... J. L. DAY, M.A., M.D.

1. Translate : (A) §§ 27-29.

Καὶ μὴν οὐδὲ τοῦτο εἰκὸς αὐτῷ πιστεῦειν, εἴπερ ἀληθῆ λέγει φάσκων ἀντειπεῖν, ὡς αὐτῷ προσετάχθη. οὐ γὰρ δὴ που ἐν τοῖς μετοίκοις πίστιν παρ' αὐτοῦ ἐλάβανον. ἔπειτα τῷ ἥττον εἰκὸς ἦν προσταχθῆναι ἢ ὅστις ἀντειπὼν γε ἐτύγχανε καὶ γνώμην ἀποδεδειγμένος ; τίνα γὰρ εἰκὸς ἦν ἥττον ταῦτα ὑπηρετῆσαι ἢ τὸν ἀντειπόντα οἷς ἐκείνοι ἐβούλοντο πραχθῆναι ; "Ἐπὶ δὲ τοῖς μὲν ἄλλοις Ἀθηναίοις ἱκανή μοι δοκεῖ πρόφασις εἶναι τῶν γεγενημένων εἰς τοὺς τριάκοντα ἀναφέρειν τὴν αἰτίαν· αὐτοὺς δὲ τοῖς πριάκοντα, ἂν εἰς σφᾶς αὐτοὺς ἀναφέρωσι, πῶς ὑμᾶς εἰκὸς ἀποδέχασθαι ; εἰ μὲν γάρ τις ἦν ἐν τῇ πόλει ἀρχὴ ἰσχυροτέρα αὐτῆς, ὑφ' ἧς αὐτῷ προσετάττετο παρὰ τὸ δίκαιον ἀνθρώπους ἀπολλύναι, ἴσως ἂν εἰκότως αὐτῷ συγγνώμην εἶχετε· νῦν δὲ παρὰ τοῦ ποτε καὶ λήψεσθε δίκην, εἴπερ ἐξέσται τοῖς τριάκοντα λέγειν ὅτι τὰ ὑπὸ τῶν τριάκοντα προσταχθέντα ἐποιοῦν ;

Explain the nature of the conditional sentences in the preceding extracts.

## 2. Translate : (B) §§ 87-88.

Ἄλλὰ τοὺς μάρτυρας ἄξιον ἰδεῖν, οἱ τούτοις μαρτυροῦν-  
τες αὐτῶν κατηγοροῦσι, σφύδρα ἐπιλήσμονας καὶ εὐήθεις  
νομίζοντες ὑμᾶς εἶναι, εἰ διὰ μὲν τὸ ὑμέτερον πλήθος ἀδεῶς  
ἡγούνται τοὺς τριάκοντα σώσειν, διὰ δὲ Ἑρατοσθένην καὶ  
τοὺς συνάρχοντας αὐτοῦ δεινὸν ἦν καὶ τῶν τεθνεώτων ἐπ'  
ἐκφορὰν ἐλθεῖν. καίτοι οὗτοι μὲν σωθέντες πάλιν ἂν δύ-  
ναιτο τὴν πόλιν ἀπολέσαι· ἐκεῖνοι δέ, οὓς οὗτοι ἀπώλε-  
σαν, τελευτήσαντες τὸν βίον πέρας ἔχουσι τῆς παρὰ τῶν  
ἐχθρῶν τιμωρίας. οὐκ οὖν δεινὸν εἰ τῶν μὲν ἀδίκως τεθνε-  
ώτων οἱ φίλοι συιαπώλλυντο, αὐτοῖς δὲ τοῖς τὴν πόλιν  
ἀπολέσασι δῆπου ἐπ' ἐκφορὰν πολλοὶ ἥξουσιν, ὅποτε βο-  
θεῖν τοσοῦτοι παρασκευάζονται.

σωθέντες : to what is this equivalent?

3. Discuss the use of *χρῆν* in the following passages, and state under what circumstances *ἂν* occurs with such constructions :

(α) *χρῆν* δέ σε εἶπερ ἦσθα χρηστὸς..... μηνυτὴν γενέσ-  
θαι. (β) καίτοι εἶπερ ἦν ἀνὴρ ἀγαθὸς ἐχρην [*ἂν*] πρῶτον  
μὲν μὴ παρανόμως ἄρχειν.

4. (1) In what estimation was Theramenes held by Xenophon, Lysias, Aristotle and Cicero? (2) What powers were vested in the Areopagus? According to Lysias in this oration, what seems to have been one of its functions?

5. (a) Show the formation of *ἡρέθη*, *ἀποδεδειγμένος*, *ὠμολογητο*, *τιμωρημένος* ἦσθα, *καταψηφιεῖσθε* *σωθῆναι*, *ἐξεκρυχθῆτε* *ἀφέλκοντες*, *εἰλήφασιν*, *παρήγγελτο*. (b) What constructions are found with *πρίν* in Attic Greek?



6. Translate into Greek :

(1) O king, we all honour you for your goodness.

(2) The following day the Greeks went away from the village.

(3) When all this had happened, he collected as many soldiers as possible, pretending that he wished to march with all speed against the Persians.

(4) Our sailors, after fighting the whole day were defeated.

(5) He did this in order that he might rescue the city.

*Unprescribed Passage.*

7. Translate :

Σκέψαι δὲ πρῶτον μὲν τὰ περὶ Ἀλκιβιάδην. ἐκεῖνος γὰρ φυγὼν παρ' ἡμῶν καὶ τοὺς ἄλλους ὁρῶν τοὺς πρὸ αὐτοῦ ταύτῃ τῇ συμφορᾷ κεχρημένους ἐπτηχότας διὰ τὸ μέγεθος τὸ τῆς πόλεως, οὐ τὴν αὐτὴν γνώμην ἔσχευ ἐκείνοις ἀλλ' οἴθηεὶς πειρατέον εἶναι βίᾳ κατελθεῖν προεῖλετο πολεμεῖν πρὸς αὐτήν καθ' ἕκαστον μὲν οὖν τῶν τότε γενομένων εἴ τις λέγειν ἐπιχειρήσειεν, οὐτ' ἂν διελθεῖν ἀκριβῶς δύναίτο πρὸς τε τὸ παρὸν ἴσως ἂν ἐνοχλήσειεν· εἰς τοσαύτην δὲ ταραχὴν κατέστησεν οὐ μόνον τὴν πόλιν ἀλλὰ καὶ Λακεδαιμονίους καὶ τοὺς ἄλλους Ἕλληνας, ὥσθ' ἡμᾶς μὲν παθεῖν, ἃ πάντες ἴσασι, τοὺς δ' ἄλλους τηλικουτοῖς κακοῖς περιπεσεῖν ὥστε μηδέπω νῦν ἐξιτήλους εἶναι τὰς συμφορὰς τὰς δι' ἐκείνον τὸν πόλεμον ἐν ταῖς πόλεσιν ἐγγεγενημένας Λακεδαιμονίους δὲ τοὺς τότε δόξαντας εὐτυχεῖν εἰς τὸς νῦν ἀτυχίας δι' Ἀλκιβιάδην καθεστάναι.—  
ISOCRATES.

## SESSIONAL EXAMINATIONS, 1896.

## I. ORDINARY GREEK.

## FIRST YEAR.

HOMER:—Odyssey X (in part), XI.

XENOPHON:—Hellenics I.

PROSE COMPOSITION: Abbott's Arnold.

## SIGHT TRANSLATION.

WEDNESDAY, April 8th, 1896:—9 TO 12 A.M.

Examiner, ..... { W. PETERSON, M.A., LL.D.  
 { J. L. DAY, M.A., M.D.

A.

## 1. Translate :

(A) Οἱ οὖν Ἀθηναῖοι τῷ Γρασύλλῳ διὰ ταῦτα ἐτι προθυμότεροι ἦσαν ἐφ' ᾗ ἦκε, καὶ ἐψηφίσαντο ὀπλίτας τε αὐτὸν καταλέξασθαι χιλίους, ἱππέας δὲ ἑκατόν, τριήρεις δὲ πεντήκοντα. Ἄγεις δὲ ἐκ τῆς Δεσελείας ἰδὼν πλοῖα πολλὰ σίτου εἰς Πειραιᾶ καταθέοντα, οὐδὲν ὄφελος ἔφην εἶναι τοὺς μετ' αὐτοῦ πολὺν ἤδη χρόνον Ἀθηναίους εἶργειν τῆς γῆς, εἰ μὴ τις σχήσοι καὶ ὅθεν ὁ κατὰ θάλατταν σίτος φοιτᾷ· κράτιστόν τε εἶναι Κλέαρχον τὸν Ῥαμφίου πρόξενον ὄντα Βυζαντίων πέμψαι εἰς Καλχηδόνα τε καὶ Βυζάντιον. δόξαντος δὲ τούτου, πληρωθεισῶν νεῶν ἕκ τε Μεγάρων καὶ παρὰ τῶν ἄλλων συμμάχων πεντεκαίδεκα στρατιωτίδων μᾶλλον ἢ ταχειῶν ὥχετο.

(a) Parse fully the words underlined.

(b) Explain the uses of the Genitive case in Ext. (A).

(c) Define the geographical position of the places mentioned.

(d) Account for the optative *σχήσοι*.

2. Translate, and explain the construction of the following extracts : (a) οὗτος δ' οὐκ ἔφη ἀλλ' ἡ κατὰ νόμον πάντα ποιήσειν. (b) ἔφασαν τοὺς στρατηγούς δικαίους εἶναι λόγον ὑπόσχειν. (c) ἔθνε τα εὐαγγελία. (d) Κόνων δὲ ὡς ἔφθη ὑπὸ τῶν πολεμίων κατακωλυθείς....(e) ἀνήχθη εὐθὺ Γυθείου ἐπὶ κατασκοπὴν τῶν τριήρων καὶ τοῦ οἴκαδε κατάπλου ὅπως ἡ πόλις πρὸς αὐτὸν ἔχει.

3. (a) Write short explanatory notes on :—(1) ἐκκλησίαν ἐποιοῦν. (2) ἡ βουλὴ εἰσήιεγκε τὴν ἑαυτῆς γνώμην. (3) εἰς τὴν φυλὴν ἐκάστην. (4) τοὺς νικῆσαντας ἐν τῇ ναυμαχίᾳ. (b) παράνομα ξυγγεγραφέναι :—In what respects were the proceedings against the generals unconstitutional ?

4. (*At Sight.*)

(B) Βάτραχοι, λυπούμενοι περὶ τῆς ἑαυτῶν ἀναρχίας, πρέσβεις ἐπεμψαν πρὸς τὸν Δία, βασιλέα αὐτοῖς παρασχεῖν· ὁ δὲ, συνιδὼν αὐτῶν τὴν εὐήθειαν, ξύλον εἰς τὴν λίμνην καθῆκεν. Καὶ οἱ βάτραχοι, τὸ μὲν πρῶτον καταπλαγέντες τὸν ψοφον, εἰς τὰ βάθη τῆς λίμνης ἔδυσαν· ὕστερον δὲ, ὡς ἀκίνητον ἦν τὸ ξύλον, ἀναδύντες, εἰς τοσοῦτον καταφρονήσεως ἤλθον, ὡς καὶ ἐπιβαίνοντες αὐτῷ ἐπικαθέζεσθαι. ἀναξιοπαθοῦντες δὲ τοιοῦτον ἔχειν βασιλέα, ἦκον ἐκ δευτέρου πρὸς τὸν Δία, καὶ τοῦτον παρεκάλουν ἀλλάξαι αὐτοῖς τὸν ἀρχηγόν· τὸν γὰρ πρῶτον λίαν εἶναι νωχελῆ καὶ ἀδόκιμον. ὁ δὲ Ζεὺς, ἀγανακτήσας κατ' αὐτῶν, ὕδρον αὐτοῖς ἔπεμψεν, ὑφ' οὗ συλλαμβανόμενοι κατησθίοντο.

Βάτραχοι : frogs. εὐήθειαν : stupidity. καταπλαγέντες : frightened at. ἀναξιοπαθοῦντες ; indignant at unworthy treatment. νωχελῆ : inactive.

## 5. (a) Translate into Greek :

(1) Cyrus thought that he had need of friends in order that he might have money and helpers. (2) If any one were to do this, he would do the greatest injury to the State. (3) Whenever I come to the city, I see Socrates conversing in the market-place. (4) It is a noble thing to take measures that the citizens may be as good as possible. (5) He did not deny that he went into the city. (6) The general forbade his soldiers to attack the enemy. (7) The allies sent ambassadors to Lacedæmon to announce the victory.

## 6. Translate :

(D) „Ελπῆνορ, πῶς ἦλθες ὑπὸ ζόφον ἡρόεντα ;  
ἔφθης πεζὸς ἐὼν ἢ ἐγὼ σὺν νηϊ̃ μελαίνῃ.“  
“Ὡς ἐφάμην, ὁ δέ μ' οἰμῶξας ἡμείβετο μύθῳ  
„διογενὲς Λαερτιάδῃ, πολυμήχαν' Ὀδυσσεῦ,  
ἄσέ με δαίμονος αἶσα κακὴ καὶ ἀθέσφατος οἶνος·  
Κίρκης δ' ἐν μεγάρῳ καταλέγμενος οὐκ ἐνόησα  
ἀψορροον καταβῆναι ἰὼν ἐς κλίμακα μακρὴν,  
ἀλλὰ καταντικρὺ τέγεος πέσον· ἐκ δέ μοι αὖχην  
ἀστραγάλων ἐάγη, ψυχὴ δ' Ἀϊδόσδε κατῆλθεν.

(E) „Αἶαν, παῖ Τελαμῶνος, οὐκ ἄρ' ἔμελλες  
οὐδὲ θανὼν λήσεσθαι ἐμοὶ χόλου εἵνεκα τευχέων  
νύλομένων ; τὰ δὲ πῆμα θεοὶ θέσαν Ἀργείοισιν,  
τοίος γὰρ σφιν πύργος ἀπώλεο· σείο δ' Ἀχαιοὶ  
ἴσον Ἀχιλλῆος κεφαλῇ Πηληϊάδαο  
ἀχνόμεθα φθιμένοιο διαμπερές· οὐδέ τις ἄλλος  
αἴτιος, ἀλλὰ Ζεὺς Δαναῶν στρατὸν αἰχμητῶν  
ἐκπάγλως ἤχθηρε, τείν δ' ἐπὶ μοῖραν ἔθηκεν.

7. (1) Ext. (D). ἔφθης, explain the construction found with this verb, and state the various usages of the same. ἐκ δέ μοι αὐχὴν ἀστραγάλων ἐάγη—note the important points of grammar. Parse καταλέγμενος.

(2) Ext. (E) What does the imperfect of μέλλω express? The syntax of θανών. The root and principal parts of λήσσειν. Give derivatives. The construction of χόλου and ἐμοί: θέσαν, ἔθηκεν—parse. What synonyms of μοῖρα have you met in Odyssey XI?

8. (1) Short notes on: Τάνταλος, Σίσυφος, Ποσειδάων Θρινακίη, ψυχὰν...ἐξ Ἑρέβεος, τὴν δὲ κατ' Ὀκεανὸν ποταμόν φέρε κῦμα ῥοοίο.

(2) Etymology, with meaning: ἀολλέες, ἐννοσίγαιόν, τανηλεγέος, ἀτερπέα, δικασπόλον, τανύηκες.

N.B.—Answer any *three* of these, including (a).

9. (a) A short exposition of the Homeric eschatology as outlined in the Eleventh Odyssey. What was peculiar in the case of Tiresias and of Elpenor? (β) Compare Virgil's description of the Lower World with Homer's (γ) Under what circumstances may *hiatus* occur? Shew the influence of lost sounds as regards *position*. (δ) How was the initial Digamma replaced in later Greek? (ε) State the difficulties in connection with the Digamma, and the theories which have been advanced to account for the "negative instances" thereof.





εἰ μὲν ταῦτα λέγων διαφθείρω τοὺς νέους, ταῦτ' ἂν εἴη βλαβερά· εἰ δέ τίς μέ φησιν ἄλλα λέγειν ἢ ταῦτα, οὐδὲν λέγει. πρὸς ταῦτα, φαίην ἄν. ὦ Ἀθηναῖοι, ἢ πείθεσθε Ἀνύτῳ ἢ μὴ, καὶ ἢ ἀφίετε ἢ μὴ ἀφίετε, ὥς ἐμοῦ οὐκ ἂν ποιήσοντας ἀλλα, οὐδ' εἰ μέλλω πολλάκις τεθνάναι.

## Cap. XXII.

3. Ext. (B). (a) To what form of condition does εἰ διαφθείρω belong? (b) What construction follows verbs of saying? Illustrate from this ext. (c) Explain the case of *σωμάτων, δημοσία, ποιήσοντας*. Write a note on the occurrence of ἂν with the future.

4. Briefly explain the following constructions:

(i) ἄ μὴ οἶδα οὐδὲ οἶμαι εἰδέναι.

(ii) ἐν ταύτῃ τῇ ἡλικίᾳ λέγοντες πρὸς ὑμᾶς ἐν ἣ ἂν μάλιστα ἐπιστεύσατε.

(iii) μὴ ὑπείκων ἅμα καὶ ἅμα ἂν ἀπολοιμην.

(iv) εὖ γὰρ οἶδ' ὅτι, ὅποι ἂν ἔλθω λέγοντος ἐμοῦ ἀκροάσονται οἱ νέοι ὥσπερ ἐνθάδε.

5. Translate:

(C) ΠΡ. λέξω τορῶς σοι πᾶν ὅπερ χρήξεις μαθεῖν, 610

οὐκ ἐμπλέκων αἰνίγματ', ἀλλ' ἀπλῶ λόγῳ,

ὥσπερ δίκαιον πρὸς φίλους οἶγιν στόμα.

πυρὸς βροτοῖς δοτῆρ' ὀρᾶς Προμηθέα.

ΙΩ. ὦ κοῖναι, ὠφέλημα θνητοῖσιν φανεῖς,

τλήμον Προμηθεῦ, τοῦ δίκην πάσχεις τάδε;

ΠΡ. ἄρμοι πέπαυμαι τοῖς ἐμῶν θρηνῶν πόνοις 615

ΙΩ. οὐκουν πόροις ἂν τήνδε δωρεὰν ἐμοί;

ΠΡ. λέγ' ἤντιν' αἰτεῖ· πᾶν γὰρ ἂν πύθοιό μου.

ΙΩ. σήμηνον ὅστις ἐν φαρμαγίᾳ σ' ὥχμασε.

- ΠΡ. βούλευμα μὲν τὸ Δίον, Ἡφαίστου δὲ χεῖρ.  
 ΙΩ. ποινὰς δὲ ποίων ἀμπλακημάτων τίνεις; 620  
 ΠΡ. τοσοῦτον ἄρκῳ σοι σαφηνίσαι μόνον.  
 ΙΩ. καὶ πρὸς γε τούτοις τέρμα τῆς ἐμῆς πλάνης  
 δείξον τίς ἔσται τῇ ταλαιπώρῳ χρόνος.  
 ΠΡ. τὸ μὴ μαθεῖν σοι κρεῖσσον ἢ μαθεῖν τάδε.
- (D) ΩΚ. ἦκω δολιχῆς τέρμα κελεύθου  
 διαμειψάμενος πρὸς σέ, Προμηθεῦ, 285  
 τὸν πτερυγῶκα τόνδ' οἶωνόν  
 γνώμη στομίων ἄτερ εὐθύνων·  
 ταῖς σαῖς δὲ τύχαις, ἴσθι, συναλγῶ.  
 τό τε γάρ με, δοκῶ, ξυγγειῆς οὕτως  
 ἐσαναγκάζει, 290  
 χωρὶς τε γένους οὐκ ἔστιν ὅτι  
 μείζονα μοῖραν νείμαιμ' ἢ σοί.  
 γνώσει δὲ τὰδ' ὥς ἔτυμ', οὐδὲ μάτην  
 χαριτογλωσσεῖν ἔνι μοι φέρε γὰρ  
 σήμαιν' ὅ τι χρή σοι ξυμπράσσειν· 295  
 οὐ γάρ ποτ' ἐρεῖς ὡς Ὀκεανοῦ  
 φίλος ἐστὶ βεβαιοτέρός σοι.
- (E) ΠΡ. ὀχλεῖς μάτην με κῆμ' ὅπως παρηγορῶν. 1001  
 εἰσελθέτω δὲ μήποθ' ὡς ἐγὼ Διὸς  
 γνώμην φοβηθεὶς θηλύνους γενήσομαι  
 γυναικομίμοις ὑπτιάσμασιν χερῶν  
 λῦσαι με δεσμῶν τῶνδε· τοῦ παντὸς δέω.

6. Ext. (C) οὔκουν πόροις ἄν. What optative? What parts of this verb are found? ἄρκῳ σαφηνίσαι. What construction would you expect to find with ἄρκῳ? If σαφηνίσας be read, how do you construe the participle? Ext. (D) Construction of νείμαιμ. τὸ ξυγγειῆς: explain Ext.

(E) What case is *κῦμα*? *ὑπιδόμασιν*. Write a note on this word.

7. (1) Etymology with meaning: *συμβόλους, κατεσκέλλουτο, εὐνύμους, δεξιοί, δαφεινός, ἡκρατής, ἄβατον*. (2) Parse: *προσέπτα, ἐπηύρου, λέλακε, μολεῖν, σκεδᾷ ἡῦχουν*.

8. Short notes (a) on the syntax of the following:

(i) *ὥς ἂν διδαχθῇ στέργειν*

(ii) *ὅπως μὴ σεαυτὸν οἰκτιεῖς*.

(iii) *τί δῆτα μέλλεις μὴ οὐ γεγωνίσκειν τὸ πᾶν* (scare)

(iv) *ἐξελυσάμην βροτοῖς τοῦ μὴ διαρραϊθentas εἰς Ἄιδου μολεῖν*.

(β) On the following references:

(a) *οἱ προσκυνοῦντες τὴν Ἀδράστειαν σοφοί*.

(b) *Γοργόνος βροτοστυγεῖς*.

(c) *βοσπορος*. (d) *Μοῖραι τρίμορφοι μνημονές τ' Ἐρινύες*.

9. Write briefly on *any three* of the following:

1. The origin of the myth of Prometheus.

2. The import of the episode of Io: Æschylus' geography of the European part of her wanderings.

3. Compare Milton's Satan with Prometheus.

4. The stage accessories in the representation of the Prometheus.

5. The chorus of Greek Tragedy.

6. The Greek drama before Æschylus.

## 10. Translate : Unprescribed passages :

(E) ἀναστὰς δὲ Θηραμένης ἐκέλευσεν ὑμᾶς τριάκοντα ἀνδράσιν ἐπιτρεψάι τὴν πόλιν, καὶ τῇ πολιτείᾳ χρῆσθαι ἣν Δρακοντίδης ἀπέφαινει. ὑμεῖς δ' ὅμως καὶ οὕτω διακειμένοι εὐορυβείτε ὡς οὐ ποιήσουντες ταῦτα· ἐγινγνώσκετε γὰρ ὅτι περὶ δουλείας καὶ ἐλευθερίας ἐν ἐκείνητῇ ἡμέρᾳ ἐξεκλησιάζετε. Θηραμένης δέ, ὃ ἄνδρες δικασταί, (καὶ τούτων ὑμᾶς αὐτοὺς μάρτυρας παρέξομαι) εἶπεν ὅτι οὐδὲν αὐτῷ μέλοι τοῦ ὑμέτερου θορύβου, ἐπειδὴ πολλοὺς μὲν Ἀθηναίων εἰδεῖν τοὺς τὰ ὅμοια πράττοντας αὐτῷ, δοκοῦντα δὲ Λυσάνδρῳ καὶ Λακεδαιμονίοις λέγει. μετ' ἐκείνῳ δὲ Λύσανδρος ἀναστὰς ἄλλα τε πολλὰ εἶπε καὶ ὅτι παρασπόνδους ὑμᾶς ἔχει, καὶ ὅτι οὐ περὶ πολιτείας ὑμῖν ἔσται ἀλλὰ περὶ σωτηρίας, εἰ μὴ ποιήσaiθ' ἃ Θηραμένης κελεύει.—LYSIAS.

(F) Ἴσως οὖν εἴποι τις ἂν πρὸς ταῦτα ὅτι ἐχρῆν τὸν Σωκράτη μὴ πρότερον τὰ πολιτικά διδάσκειν τοὺς συνόντας ἢ σωφρονεῖν. ἐγὼ δὲ πρὸς τοῦτο μὲν οὐκ ἀντιλέγω πάντας, ἀλλὰ τοὺς διδάσκοντας ὁρῶ αὐτοὺς δεικνύοντας τε τοῖς μανθάνουσιν ἥπερ αὐτοὶ ποιοῦσιν ἃ διδάσκουσι καὶ τῷ λόγῳ προσβιβαζοντας. οἶδα δὲ καὶ Σωκράτη δεικνύντα τοῖς συνουσίῳ αὐτὸν καλὸν καὶ ἀγαθὸν ὄντα καὶ διαλεγόμενον κάλλιστα περὶ ἀρετῆς καὶ τῶν ἄλλων ἀνθρωπίνων. οἶδα δὲ καὶ κακίῳ σωφρονούντι, ἔστε Σωκράτει συνήστην, οὐ φοβουμένῳ μὴ ζημιοῖντο ἢ παίοντο ὑπὸ Σωκράτους, ἀλλ' οἰομένῳ τότε κράτιστον εἶναι τοῦτο πράττειν.—XENOPHON.



## THIRD YEAR.

EURIPIDES :—*Medea*.

PROSE COMPOSITION.

SIGHT TRANSLATION.

MONDAY, APRIL 13TH, 1896 :—9 TO 12 A.M.

*Examiner*, ..... J. L. DAY, M.A., M D.

## 1. Translate :

(A) ΜΗ. ὦ μεγάλη Θέμι καὶ πότνι' Ἀρτεμι,  
 λεύσσεθ' ἅ πάσχω, μεγάλοις ὄρκοις  
 ἐνδησάμενα τὸν κατάρατον  
 πόσιν ; ὅν ποτ' ἐγὼ νυμφαν τ' ἐσίδοιμ'  
 αὐτοῖς μελάθροις διςκναιομένους,  
 οἳ γ' ἐμὲ πρόσθεν τολμῶσ' ἀδικεῖν.  
 ὦ πάτερ, ὦ πόλις, ὧν ἀπενάσθην  
 αἰσχυρῶς, τὸν ἐμὸν κτείναςα κάσιν.

ΤΡ. κλύεθ' οἷα λέγει κάπιβοᾶται  
 Θέμιν εὐκαταίαν Ζῆνι θ', ὃς ὄρκων  
 θνητοῖς ταμίας νενόμισται ;  
 οὐκ ἔστιν ὅπως ἔν τινι μικρῷ  
 δέσποινᾷ χόλον καταπαύσει.

160-172

(B) ΜΗ. μὴ, πρὸς σε γονάτων τῆς τε νεογάμου κόρης.  
 ΚΡ. λόγους ἀναλοῖς· οὐ γὰρ ἂν πείσαις ποτέ.  
 ΜΗ. ἀλλ' ἐξελαῖς με, κούδεν αἰδέσει λιτᾶς ;  
 ΚΡ. φιλῶ γὰρ οὐ σὲ μᾶλλον ἢ δόμους ἐμούς.  
 ΜΗ. ὦ πατρίς, ὥς σου κάρτα νῦν ννείον ἔχω.  
 ΚΡ. πλὴν γὰρ τέκνων ἐμοιγε φίλτατον πόλις.  
 ΜΗ. φεῦ φεῦ· βροτοῖς ἔρωτες 'ς κακὸν μέγα.  
 ΚΡ. ὅπως ἂν, οἶμαι, καὶ παραστῶσιν τύχαι.  
 ΜΗ. Ζεῦ, μὴ λάθοι σε τῶν δ' ὃς αἴτιος κακῶν.

324-332

- (C) βέβακε δ' ὄρκων χάρις, οὐδ' ἔτ' αἰδώς  
 'Ελλάδι τᾷ μεγάλᾳ μένει, αἰθερία δ' ἀνέπτα.  
 σοὶ δ' οὔτε πατρὸς δόμοι,  
 δύστανε, μεθορμίσασθαι  
 μόχθων πάρα, τῶν δὲ λέκτρων  
 ἄλλα βασιλεία κρείσσων  
 δόμοις ἐπανεῖστα. 438-444

- (D) ΠΑ. δέσποιν', ἀφείνται παῖδες οἶδε σοι φυγῆς,  
 καὶ δῶρα νύμφῃ βασιλῆς ἀσμενὴ χερσὶν  
 ἐδέξατ' εἰρήνῃ δὲ τάκεῖθεν τέκνοις.  
 ἔα.

τί συγχυθεῖς' ἔστηκας ἥνικ' εὐτυχεῖς ;  
 τί σὴν ἔτρεψας ἔμπαλιν παρηΐδα  
 κοῦκ ἀσμενὴ τόνδ' ἐξ ἐμοῦ δεχει λόγον ;

ΜΗ. αἰαί.

ΠΑ. τάδ' οὐ ξυνωδὰ τοῖσιν ἐξηγγελημένοις,

ΜΗ. αἰαὶ μάλ' αὐθις. ΩΑ. μὲν τιν' ἀγγέλλων τύχην  
 οὐκ οἶδα, δόξην δ' ἐσφάλην εὐαγγέλου ;

ΜΗ. ἡγγειλας οἶ' ἡγγειλας· οὐ σὲ μέφομαι.

ΠΑ. τί δὴ κατηφεῖς ὄμμα καὶ δακρυρροεῖς ;

ΜΗ. πολλή μ' ἀνάγκη, πρέσβυ· ταῦτα γὰρ θεοὶ  
 καὶ γὰρ κακῶς φρονοῦσ' ἐμῇ χανησάμην.

1002 1014

2. (1) Ext. (A). πότνια "Αρτεμι : discuss this, the MS. reading, and give Munro's emendation. αὐτοῖς : explain this usage of αὐτός and also the case of μελάθροις. Express οἷ γε in Latin. Account for case of ὦν.

(2) Ext. (B). What name is used to designate dialogue of alternate lines ? πρὸς σε γονάτων : write a note on such constructions. Parse ἀναλοῖς and ἐξελᾶς, ἔρωτες : what force has this plural ? Supply the ellipsis, and explain construction of ὅπως .....τύχαι.

(3) Ext. (C). Account for the use of the Doric dialect in the choral parts of a Greek play. *ἀνέπτα* : mood and tense. Explain the metaphor in *μεθορμίσασθαι*, the case of *μόχθων*, and the use of *πάρα* here. *ἐπανέστα* : others read *ἐπέστα* ; parse, and explain the force of the tense.

(4) Ext. (D). *τάκειθεν* : whence ? *δόξης* : what genitive ? *κατηφείς* : what variant occurs ? Translate accordingly. *ἐμηχανησάμην* : what does the use of sing. here imply ?

### 3. Translate :

(E) ἄλλὰ Σωκράτης γε, ἔφη ὁ κατήγορος, οὐ μόνον τοὺς πατέρας ἀλλὰ καὶ τοὺς ἄλλους συγγενεῖς ἐποίει ἐν ἀτιμίᾳ εἶναι παρὰ τοῖς ἑαυτῷ συνοῦσι, λέγων ὡς οὔτε τοὺς κάμνοντας οὔτε τοὺς δικαζομένους οἱ συγγενεῖς ὠφελούσιν, ἀλλὰ τοὺς μὲν οἱ ἰατροί, τοὺς δὲ οἱ συνδικεῖν ἐπιστάμενοι. ἔφη δὲ καὶ περὶ τῶν φίλων αὐτὸν λέγειν ὡς οὔδεν ὄφελος εὔνους εἶναι, εἰ μὴ καὶ ὠφελεῖν δυνήσονται. μόνους δὲ φάσκειν αὐτὸν ἀξιόλους εἶναι τιμῆς τοὺς εἰδότας τὰ δέοντα καὶ ἐρμηνεύσαι δυναμένους. ἀναπεύθοντα οὖν τοὺς νέους αὐτὸν ὡς αὐτὸς εἴη σοφώτατός τε καὶ ἄλλους ἱκανέτατος ποιῆσαι σοφούς, οὕτω διατιθέναι τοὺς ἑαυτῷ συνόντας ὥστε μηδαμοῦ παρ' αὐτοῖς τοὺς ἄλλους εἶναι πρὸς αὐτόν.

ΧΕΝΟΡΙΘΟΣ : *Memorab.*

(F) Ἀλλὰ γὰρ οὐκ ἐκ τούτων δίκαιόν ἐστι σκοπεῖν τὴν βασιλείας δύναμιν, ἐξ ὧν μεθ' ἑκατέρων γέγονεν, ἀλλ' ἐξ ὧν αὐτὸς ὑπὲρ αὐτοῦ πεπολέμηκεν. καὶ πρῶτον μὲν ἀποστάσης Αἰγύπτου τί διαπέπρακται πρὸς τοὺς ἔχοντας αὐτήν ; οὐκ ἐκεῖνος μὲν ἐπὶ τὸν πόλεμον τοῦτον κατέπεμψε τοὺς εὐδοκιμωτάτους Περσῶν, Ἀβροκόμαν καὶ Τιθραύστην καὶ Φαρνάβασον, οὗτοι δὲ τρί' ἔτη μειναντες καὶ πλείω κακὰ παθόντες ἢ ποιήσαντες, τελευτώντες οὕτως αἰσχρῶς

ἀπηλλάγησαν ὥστε τοὺς ἀφεστῶτας μηκέτι, τὴν ἐλευθερίαν ἀγαπᾶν ἀλλ' ἥδη καὶ τῶν ὁμόρων ζητεῖν ἐπάρχειν.

ISOCRATES : *Panegyricus*.

4. (a) Translate freely, explaining the use of the following tenses, ἦσθα, λέξεις, δράσω, ἐπήνεσα :

(1) τάλαιν', ὡς ἄρ' ἦσθα πέτρος ἡ σίδαρος, ἅτις  
τέκνων ὃν ἔτεκες

ἄροτὸν αὐτόχειρε μοίρα κτενεῖς.

(2) οἴμοι τί λέξεις ; ὡς μ' ἀπώλεσας, γύναι.

(3) οἴμοι, τί δράσω ; ποῖ φύγω μητρὸς χέρας ;

(4) ἐγὼ δ' Ἰάσων ; οὐδὲ ταῦτ' ἐπήνεσα.

(b) Mood and tense, etc. ; give root and formation of last three : γαμῆς, ἀνίεις, ἄραρε, εἰθίσθαι, ἠνέσχετο, ἀγῆλαι, ἐσπείσθαι.

5. Short explanatory notes on the following : (1) κτα-  
νεῖν πείσασα Ἡελιάδας κόρας πατέρα. (2) οἷοι παῖδες ἐκ  
τρόχων πεπαυμένοι. (3) πέσσοις προσελθών. (4) ἄκ-  
ροισι λαίφους κρασπέδοις. (5) Πανὸς ὕργας. (6) ἔλκων  
κῶλον ἐκπλέθρου δρόμου ταχὺς βαδιστῆς τερμόνων ἀνθήπ-  
τετο. (Note variants and various interpretations.)

6. (1) Whence are the following metaphors derived ?

(a) ἐγὼ βραβεὺς λόγου τοῦδ' εἰμί.

(b) χωρὶς γὰρ ἄλλης ἣς ἔχουσιν ἀργίας  
φθόνον πρὸς ἀστῶν ἀλφάνουσι δυσμενῇ.

(c) δεῖ μάντιν εἶναι, μὴ μαθοῦσαν οἴκοθεν,  
ὅτῳ μάλιστα χρήσεται ξυνευνέτῃ.

2) Etymology, with meaning : ξυνωρίδα, χρυσήλα-  
τον, ξύμβολα, σκαιοῖσιν, χαρακτήρ, παιδολέτωρ.

7. Notes on the following constructions : note variants.

- (i) ἀλλὰ τῆς ἐμῆς κάκης,  
τὸ καὶ προέσθαι μαλθακοὺς λόγους φρενός
- (ii) ἥμερός μ' ὑπῆλθε γῆ τε κούρανῶ  
λέξαι μολούσῃ δεῦρο δεσποίνης τυχας.
- (iii) γυνὴ δὲ θῆλυ, καπὶ δακρύοις ἔφυ.
- (iv) ἀχάριστος ὅλοιθ' ὅτῳ πάρεστι  
μὴ φίλους τιμᾶν, καθαρὰν ἀνοίξαντα κληῖδα φρε-  
νῶν.
- (v) μελέα πόνων.

8. Name the parts into which a Greek play was divided.  
Illustrate from *Medea*.

9. Translate into Greek :

After this Jason and Medea sailed to the city of Corinth where King Kreon ruled. He received them joyfully, for he had heard of Jason's brave deeds, and was glad that he had come to live in his country. So for ten years they lived in peace beside Kreon, and the gods sent them two children, whom they loved dearly. But the king had a daughter named Glauce; and as Jason pleased him well, he said to him that if he would get rid of Medea, he would give him this daughter for his wife. Medea was really very angry, but she professed to be willing to go away, intending, however, first to kill the two children; for she knew that this would grieve her husband.



## B. A. ORDINARY EXAMINATION.

THURSDAY, APRIL 16th, 1896 :—9 TO 12 A.M.

DEMOSTHENES :—Olynthiacs.

EURIPIDES — *Meleas*.

Examiners,..... { W. PETERSON, M.A., LL.D.  
 { A. JUDSON EATON, M.A., PH.D.

[Write A and B in separate Books.]

A.

## 1. Translate :—

(a) Καὶ περὶ μὲν τῆς βοηθείας ταῦτα γίγνώσκω. περὶ δὲ χρημάτων πόρου, ἔστιν, ὃ ἄνδρες Ἀθηναῖοι χρήματα ὑμῖν, ἔστιν ὅσα οὐδενὶ τῶν ἄλλων ἀνθρώπων στρατιωτικὰ ταῦτα δὲ ὑμεῖς οὕτως ὥς βούλεσθε λαμβάνετε. εἰ μὲν οὖν ταῦτα τοῖς στρατευομένοις ἀποδώσετε, οὐδενὸς ὑμῖν προσδεῖ πόρου· εἰ δὲ μή, προσδεῖ, μᾶλλον δ' ἅπαντος ἐνδεῖ πόρου, τί οὖν, ἂν τις εἴποι, σὺ γράφεις ταῦτ' εἶναι στρατιωτικά; μὰ Δὲ οὐκ ἔγωγε ἐγὼ μὲν γὰρ ἡγοῦμαι στρατιώτας δεῖν κατασκευασθῆναι, καὶ εἶναι στρατιωτικά, καὶ μίαν σύνταξιν εἶναι τὴν αὐτὴν τοῦ τε λαμβάνειν καὶ τοῦ ποιεῖν τὰ δέοντα· ὑμεῖς δὲ οὕτω πως ἄνευ πραγμάτων λαμβάνειν εἰς τὰς ἐορτάς.

(b) ἐγὼ μὲν γάρ, ὃ ἄνδρες Ἀθηναῖοι, σφόδρ' ἂν ἡγοῦμην καὶ αὐτὸς φοβερὸν τὸν Φίλιππον καὶ θαυμαστόν, εἰ τὰ δίκαια πράττοντα ἐώσω αὐτὸν ἡϋξημένον· νῦν δὲ θεωρῶν καὶ σκοπῶν εὐρίσκω τὴν μὲν ἡμετέραν εὐήθειαν τὸ κατ' ἀρχάς, ὅτε Ὀλυνθίους ἀπήλυνόν τινες ἐνθένδε βουλομένους ἡμῖν διαλεχθῆναι, τῷ τὴν Ἀμφίπολιν φάσκειν παραδῶσιν καὶ τὸ θρυλούμενόν ποτε ἀπόρρητον ἐκείνο κατασκευ-

άσαι, τούτῳ προσάγαγόμενον, τὴν δ' Ὀλυνθίων φιλίαν μετὰ ταῦτα, τῷ Ποτίδαιαν, οὔσαν ὑμετέραν, ἐξελεῖν, καὶ τοὺς μὲν πρότερον συμμάχους ὑμᾶς ἀδικησαί, παραδοῦναι δὲ ἐκείνοις, Θετταλοὺς δὲ νῦν τὰ τελευταῖα τῷ Μαγνησίαν παραδώσειν ὑποσχέσθαι, καὶ τὸν Φωκικὸν πόλεμον πολέμησειν ὑπὲρ αὐτῶν ἀναδέξασθαι. ὅλως δὲ οὐδεὶς ἔστιν, ὄντιν' οὐ πεφενάκικεν ἐκεῖνος τῶν αὐτῷ χρησαμένων· τὴν γὰρ ἐκάστων ἄνοιαν ἀεὶ τῶν ἀγνοούντων αὐτὸν ἐξαπατῶν καὶ προσλαμβάνων, οὕτως ἠύξηθη.

(c) τί οὖν υπολοιπον, ὦ ἄνδρες Ἀθηναῖοι, πλὴν βοηθεῖν ἐβρώμενως καὶ προθύμως ; ἐγὼ μὲν οὐχ ὀρώ. χωρὶς γὰρ τῆς περιστάσης ἂν ἡμᾶς αἰσχύνης, εἰ καθυφείμεθά τι τῶν πραγμάτων, οὐδὲ τὸν φόβον, ὦ ἄνδρες Ἀθηναῖοι, μικρὸν ὀρώ τὸν τῶν μετὰ ταῦτα, ἐχόντων μὲν ὥς ἔχουσι Θηβαίων ἡμῖν, ἀπειρηκότων δὲ χρήμασι Φωκέων· μηδενὸς δ' ἐμποδῶν ὄντος Φιλίππου τὰ παρόντα καταστρεψάμενῳ, πρὸς ταῦτα ἐπικλῖναι τὰ πράγματα. ἀλλὰ μὴν εἴ τις ὑμῶν εἰς τοῦτο ἀναβαλλεται ποιήσιν τὰ δέοντα, ἰδεῖν ἐγγύθεν βούλεται τὰ δεινά, ἐξὸν ἀκούειν ἄλλοθι γιγνόμενα, καὶ βοηθοὺς ἑαυτῷ ζητεῖν, ἐξὸν νῦν ἑτέροις αὐτὸν βοηθεῖν· ὅτι γὰρ εἰς τοῦτο περιστήσεται τὰ πράγματα, ἔὰν τὰ παρόντα προώμεθα, σχεδὸν ἴσμεν ἅπαντες δῆπου.

2. (1) Explain the grammatical construction of the infinitives λαμβάνειν (εἰς τὰς ἐορταίς), παραδώσειν (Ext. b), ποιήσιν, (Ext. c) ; and of the participles σκοπῶν, προσάγαγόμενον (Ext. b) and ἐξόν (Ext. c). (2) Give the principal parts of ἐώρων, εὐρίσκω, and ἠύξημένον. (3) ἐγὼ μὲν οὐχ ὀρώ : remark on this use of μέν. (4) περιστάσης ἂν : what is the force of the particle ?

3. (a) θεωρῶν κοὶ σκοπῶν : distinguish the meaning of these two verbs. (b) Write explanatory notes on : (1)

τὸ θρυλούμενον ποτε ἀπόρρητον, (Ext. b. (2) τῷ Ποτί  
 δαιαν ἐξελεῖν, (3) ἐχόντων μὲν ὡς ἔχυσσι Θηβαίων ἡμῖν  
 (Ext. c).

4. (a) Give the meaning and derivation of : ἀνεχαίτισε,  
 λήμματα, δυσχερές, πεφενάκιεν, ἐμποδών. (b) Explain  
 the terms εἰσφορά, νομοθέται, τὰ μυστήρια.

5. (a) Give the geographical position of Amphipolis,  
 Pydna, Potidaea, Pagasae, Heraeon Teichos.

6. Write on the following topics :

(a) τὸ θεωρικόν.

(b) Attack on Olynthus and its capture by Philip.

(c) Life of Demosthenes.

(B)

7. Translate :

καὶ δὴ τεθνᾶσι τίς με δέξεται πόλις ;  
 τίς γῆν ἄσυλον καὶ δόμους ἔχεγγύους  
 ξένος παρασχὼν ῥύσεται τοῦμόν δέμας ;  
 οὐκ ἔστι. μείνας' οὖν ἔτι σμικρὸν χρόνον,  
 ἦν μὲν τις ἡμῖν πύργος ἀσφαλῆς φανῇ,  
 δόλω μέτειμι τόνδε καὶ σιγῇ φόνον·  
 ἣν δ' ἐξελαύνη ξυμφορὰ μ' ἀμήχανος,  
 αὐτὴ ξίφος λαβοῦσα, κεῖ μέλλω θανεῖν,  
 κτενῶ σφε, τόλμης δ' εἶμι πρὸς τὸ καρτερόν,  
 οὐ γὰρ μὰ τὴν δέσποινον ἦν ἐγὼ σέβω  
 μάλιστα πάντων· καὶ ξυνεργὸν εἰλόμην,  
 Ἑκάτην, μυχοῖς ναίουσαν ἐστίας ἐμῆς,  
 χαίρων τις αὐτῶν τοῦμόν ἀλδυνεῖ κέαρ.  
 πικροὺς δ' ἐγὼ σφιν καὶ λυγροὺς θήσω γάμους,

πικρὸν δὲ κῆδος καὶ φυγὰς ἐμᾶς χθονός.  
 ἀλλ' εἶα· φείδου μηδὲν ὦν ἐπίσασαι,  
 Μήδεια, βουλευούσα καὶ τεχνωμένη·  
 ἔρπ' εἰς τὸ δεινόν· νῦν ἀγὼν εὐψυχίας.

- (β) ὦ πατρὶς, ὦ δώματα μὴ στρ. β'.  
 δῆτ' ἀπολὶς γενοίμαν  
 τὸν ἀμαχανίας ἔχουσά δυσπέρατον αἰῶν'  
 οἰκτρότατον ἄχεων.  
 θανάτῳ πάρος δαμείην  
 ἀμέραν τάνδ' ἐξανύσασα· μόχθων δ' οὐκ ἄλλος  
 ὑπερθεν ἢ γὰρ πατρίας στέρεσθαι.  
 εἵδομεν, οὐκ ἐξ ἐτέρων ἀντ. β'.  
 μῦθον ἔχω φράσασθαι·  
 σέ γὰρ οὐ πόλις, οὐ φίλων τις ὥκτειρεν παθοῦσαν  
 δεινότατα παθέων.  
 ἀχάριστος ὅλοιθ' ὅτῳ πάρεστι  
 μὴ φίλους τιμᾶν καθαράν ἀνοιξάντα κλῆδα φρενῶν.  
 ἐμοὶ μὲν φίλος οὐποτ' ἔσται.

- (γ) ΧΟ. κάμοι κατ' ὅσων χλωρόν ὠρμήθη δακρυ·  
 καὶ μὴ προβαίῃ· μεῖζον ἢ τὸ νῦν κακόν.  
 ΙΑ. αἰνῶ, γύναι, τάδ', οὐδ' ἐκείνα μέμφομαι·  
 εἰκὸς γὰρ ὀργὰς θῆλυ ποιεῖσθαι γένος,  
 γάμους παρεμπολῶντος ἀλλοίους, πόσει.  
 ἀλλ' ἐς τὸ λῶον σὸν μεθέστηκεν κέαρ,  
 [βουλὴν γυναικὸς ἔργα ταῦτα σώφρονος].  
 ὑμῶν δέ, παῖδες, οὐκ ἀφροντίστως πατὴρ  
 πολλὴν ἔθηκε σὺν θεοῖς σωτηρίαν·  
 οἶμαι γὰρ ὑμᾶς τησδε γῆς Κορινθίας  
 τὰ πρῶτ' ἔσεσθαι ξὺν κασιγνήτοις ἔτι

8. Parse the words underlined.

9. (1) Sketch the legend of the Medea, as found in the play.

(2) Give the substance (quoting the original where you can) of Medea's famous speech which begins *ὦ τέκνα τέκνα σφῶν μὲν ἔστι δὴ πόλις καὶ δῶμα κ.τ.λ.*

(3) What is the date of the Medea? Describe the condition of affairs in Greece at the time of its production.

(4) Give the scheme of the Iambic Trimeter.

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#### ORDINARY LATIN.

##### FIRST YEAR.

SALLUST:—*de Catilinæ coniuratione.*

VIRGIL:—*Aeneid VI.*

(SIGHT TRANSLATION.)

THURSDAY, APRIL 9TH:—9 TO 12 A.M.

*Examin. r.* ..... J. L. DAY, M.A., M.D.

A.

##### 1. Translate :

(A) Igitur his genus, aetas, eloquentia prope aequalia fuere ; magnitudo animi par, item gloria, sed alia alii. Caesar beneficiis atque munificentia magnus habebatur, integritate vitae Cato. Ille mansuetudine et misericordia clarus factus ; huic severitas dignitatem addiderat. Caesar dando, sublevando, *ignoscendo* : Cato nihil largiundo gloriam adeptus est. In altero miseris perfugium erat ; in altero *malis* perniciēs ; illius facilitas, huius constancia laudabatur. Postremo Caesar in animum induxerat laborare, vigilare ; negotiis amicorum intentus sca *neglegere*, nihil denegare quod dono dignum esset ; sibi magnum imperium, exercitum, novum bellum exoptabat, ubi virtus enitescere posset. At Catoni studium *modestiae*, decoris, sed maxime severitatis erat. Non divitiis cum divite, neque factione cum factioso, sed cum strenuo virtute, cum modesto pudore, cum innocente abstinentia certabat ; esse quam videri bonus malebat ; ita quo minus *petebat* gloriam, eo illum magis sequebatur



2. Genus, aetas: state the facts. What was Quintilian's estimate of Caesar as an orator? Derive *mansuetudo*. Parse words in italics. Account for construction of *esset*, *posset*, *Catoni*, *bonus*, *dono*.

3. (a) A short account of the conspiracy of Catiline as narrated by Sallust. (b) Which were the *magistratus cum imperio*?

4. Translate:

- (B) Nec minus interea Misenum in litore Teucri  
 Flebant, et cineri iugrato suprema ferebant.  
 Principio pinguem taedis et robore secto  
 Ingentem struxere pyram: cui frondibus atris 215  
 Intexunt latera, et feralis ante cupressos  
 Constituunt, decorantque super fulgentibus armis.  
 Pars calidos latices et aena undantia flammis  
 Expediunt, corpusque lavant frigentis et unguunt;  
 Fit gemitus. Tum membra toro defleta reponunt, 220  
 Purpureasque super vestis, velamina nota,  
 Coniciunt. Pars ingenti subiere feretro,  
 Triste ministerium, et subiectam more parentum  
 Aversi tenere facem. Congesta cremantur  
 Turea dona, dapes, fuso crateris olivo. 225  
 Postquam conlapsi cineres, et flamma quievit,  
 Reliquias vino et bibulam lavere favillam;  
 Ossaque lecta cado texit Corynaeus aeno,  
 Idem ter socios pura circumtulit unda,  
 Spargens rore levi et ramo felicis olivae, 230  
 Lustravitque viros, dixitque novissima verba.
- (C) Principio coelum ac terras, camposque liquentis,  
 Lucentemque globum Lunae, Titaniaque astra, 725  
 Spiritus intus alit, totamque infusa per artus  
 Mens agitat molem et magno se corpore miscet.  
 Inde hominum pecudumque genus, viaeque volantum,  
 Et quae marmoreo fert monstra sub aequore pontus.  
 Igneus est ollis vigor et coelestis origo 730  
 Seminibus, quantum non noxia corpora tardant,  
 Terrenique hebetant artus moribundae membra.  
 Hinc metuunt, cupiuntque; dolent, gaudentque; neque auras  
 Dispiciunt, clausae tenebris et carcere caeco.  
 Quin et supremo quam lumine vita relinquit, 735  
 Non tamen omne malum miseris, nec funditus omnes  
 Corporeae excedunt pestes; penitusque necesse est  
 Multa diu concreta modis inolescere miris.

5. Ext. (B). Explain the construction of *feretro* (222), *ministerium* (223) *conlapsi* (226), *socios* (229). Remark on the expression *rore levi et ramo felicis olivae*. A note on *novissima verba*.

Ext. (C). *Titania astra*: Explain. To what does *corpore* refer? Parse *ollis* (730). Account for the cases of *principio* (724), *seminibus* (731), *tenebris* (734), *lumine* (735).

6. Quote the passages in *Aeneid VI* which bear upon the metempsychosis doctrine and explain it. Give a short exposition of Virgil's eschatology as set forth in this book. What terms does Virgil use to designate the lower world?

Quote Virgil's description of (a) Charon, or of (b) Cerberus.

7. (a) The important points of construction in the following:

(1) *damnati crimine mortis*, (2) *Ipse velis ministrat*, (3) *quid memorem Lapithas*? (4) *quae te Fortuna fatigat ut tristes domos.....adires*.

(b) Short notes on: *Rhadamanthus*, *Hecate*, *Euboicis Cumarum oris*, *Sibylla*, *geminæ Somni portae*, *centum errant annos*.

#### UNPRESCRIBED PASSAGE:

8. Translate:

Nocte media profectus ut locum quem vellet priusquam hostes sentirent, caperet, præter castra hostium exercitum circumducit et prima luce acie instructa sub ipsum vallum tres cohortes mittit. Mirantes barbari at tergo apparuisse Romanum discurrere et ipsi ad arma. Interim consul, apud suos "nusquam nisi in virtute spes est, milites" inquit. Sub hæc cohortes recipi iubet, ut barbaros simulatione fugae eliceret. Id quod crederat, evenit. Pertimuisse et cedere rati Romanos porta erumpunt et quantum inter castra sua et aciem hostium relictum erat loci armatis complent. Dum trepidant acie instruenda, consul iam paratis ordinatisque omnibus incompósitos aggreditur. Equites primos ab utroque cornu in pugnam educit. Sed in dextro extemplo pulsī etiam pediti terrorem intulere.

INTERMEDIATE EXAMINATION.

*Livy, Book XXI. Horace, Epistles, Bk. 1.*

THURSDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiners,..... { A JUDSON EATON, M.A. PH.D.  
W. CROCKET, M.A.

(Write I. and II. on separate sets of papers).

I.

1. Translate :

(a) Is plura consilio quam vi gerens hospitii magis regularum conciliandisque per amicitiam principum novis gentibus quam bello aut armis rem Carthaginensem auxit. ceterum nihilo ei pax tutior fuit : barbarus eum quidam palam ob iram interfecti ab eo domini obruncat : comprehensusque ab circumstantibus haud alio, quam si *evassisset*, *vultu*, tormentis quoque cum laceraretur, eo fuit habitu oris, ut superante laetitia dolores ridentis etiam speciem praeberit. Cum hoc Histrubale, quia *mireae artis* in sollicitandis gentibus imperioque suo iungendis fuerat, foedus renovaverat populus Romanus, ut finis utriusque imperii esset annis Hiberus, Saguntinisque mediis inter imperia duorum populorum libertas servaretur.

(b) Hannibal Sagunto capto Cathaginem Novam in hiberna concessat, ibique *auditis*, quae *Romae* quaeque Carthagine acta *decretuque forent*, seque non ducem solum, sed etiam causam esse belli, *partitis* divenditisque reliquis praedae nihil ultra differendum ratus, Hispani generis milites convocat "Credo ego vos" inquit, "socii, et ipsos cernere, pacatis omnibus Hispaniae populis, aut finiendam nobis militiam exercitusque dimittendos esse aut in alias terras transferendum bellum: ita enim hae gentes non pacis solum, sed etiam victoriae bonis dorebunt, si ex aliis gentibus praedam et gloriam quaeremus. Itaque cum longinqua a domo *instet* militia incertumque sit, quando domos vestras et quae cuique ibi cara sunt, *visuri sitis*, si quis *vestrum* suos invisere vult, comeatum do. Primo vere edico *adsitis*, ut diis bene iuvantibus bellum ingentis gloriae praedaeque futurum incipiamus."

(c) Scipio caedem eam signum defectionis omnium Gallorum esse ratus, contactosque eo scelere velut injecta rabie ad arma ituros, quanquam gravis adhuc vulnere erat, tamen quarta vigilia noctis insequentis tacito agmine profectus, ad Trebiam fluvium iam in loca altiora collesque impeditiore equi castra movet.

2. (a) Explain carefully the construction of italicized words in the above extracts. (b) Describe the *periodic construction*, and point out the best example of it in the extracts given. (c) Turn the sentence, *credō ego vos.....quaeremus* into Indirect Narration, giving your reasons for each change introduced.

3. (a) Distinguish the meaning of: *vis, robur: vestimentum, vestitus, vestis; fere, ferme, paene, prope; obsidio, oppugnatio*. (b) Give the meaning and derivation of: *eccidium, bruma, anceps, anfractus, stipendium, divendo, praerogativa, caementum, contio*. (c) Define the terms: *coloniae praetorium, vineae, aries, catapulta, phalarica*. (d) Give the principal parts of *decreta, partilis, dividendis, instet*.

4. Give the geographical position of *Aegales Insulae, Saguntum, Placentia, Massilia, Gades*. Write a brief note on the last named.

## II.

5. Translate:

(a) Nunc itaque et versus et cetera ludicra pono;  
quid verum atque decens curo et rogo et omnis in hoc sum;  
condo et compono quae mox depromere possim.  
Ac ne forte roges quo me duce, quo lare tuter:  
nullius addictus iurare in verba magistri,  
quo me cumque rapit tempestas, deferor hospes.  
Nunc agilis fio et mensor civilibus undis,  
virtutis verae custos rigidusque satelles;  
nunc in Aristippi furtim praecepta relabor,  
et mihi res, non me rebus, subiungere conor.

(b) Nestor componere litis  
inter Peliden festinat et inter Atriden:  
hunc amor, ira quidem communiter urit utrumque.  
Quicquid delirant reges, plectuntur Achivi.  
Seditione, dolis, scelere atque libidine et ira  
Iliacos intra muros peccatur et extra.

(c) "Demetri" (puer hic non laeve iussa Philippi  
accipiebat) "abi, quaere et refer, unde domo, quis,  
cuius fortunae, quo sit patre quove patrono."  
Ita redit et narrat Volteium nomine Menam,  
praeconem, tenui censu, sine crimine, notum  
et properare loco et cessare, et quaerere et uti,  
gaudentem parvisque sodalibus et lare certo  
et ludis et post decisa negotia campo.  
"Scitari libet ex ipso quodecumque refers; dic  
ad cenam veniat."

6. (1) Remark on the meaning or construction of the following words in Ext. (a): *pono, condo, compono, depromere, lare, addictus, iurare mensor, civilibus undis*. (2) Write explanatory notes on: (a) *virtutis verae custos*; (b) *in Aristippi furtim praecepta relabor*; (c) *Nestor componere.....inter Atriden*; (d) *quo sit patre quove patrono*; (e) *spectatum satis et donatum iam rude*; (f) *Porticus Agrippae*.

7. (a) Scan the first four lines of Ext. (a).  
 (b) Explain the construction of *tenui censu, sine crimine*, and *propere* in Ext. (c).  
 (c) Give the principal parts of *plectuntur, quaero, gaudentem*.  
 (d) Give the etymology, with meaning, of *delirant, praeconem, sodes, eliminat, apricum, miles cere*.  
 8. (a) Write a brief life of Horace.  
 (b) Give an outline of the thought of the second epistle of the first book.  
 (c) Enumerate some of the excellencies and defects of Livy's work.

## THIRD YEAR.

JUVENAL:—*Satires VIII., X., and XIII.*

PLINY:—*Select Letters.*

THURSDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner, ..... A. JUDSON EATON, M.A., PH.D.

## 1. Translate:

- (a) Tantum igitur muros intra toga contulit illi  
 Nominis et tituli, quantum non Leucade, quantum  
 Thessaliae campis Octavius abstulit udo  
 Caedibus assiduus gladio. Sed Roma parentem,  
 Roma Patrem Patriae Ciceronem libera dixit.
- (b) Proclita laxabant portarum claustra tyrannis  
 Exsulibus iuvenes ipsius Consulis et quos  
 Magnum aliquid dubia pro libertate deceret,  
 Quod miraretur cum Coclite Mucius et quae  
 Imperii fines Tiberinum virgo natavit.
- (c) EXEMPLO quodcunque malo committitur, ipsi  
 Displicet auctori. Prima est haec ultio, quod se  
 Iudice nemo nocens absolvitur, improba quamvis  
 Gratia fallaci Praetoris vicerit urna.  
 Quid sentire putas omnes, Calvine, recenti  
 De scelere et fidei violatae crimine? Sed nec  
 Tam tenuis census tibi contigit, ut mediocris  
 Iacturae te mergat onus: nec rara videmus,  
 Quae pateris.
- (d) Eloquium ac famam Demosthenis aut Ciceronis  
 Incipit optare et totis Quinquatribus optat,



Quisquis adhuc uno parcam colit asse Minervam,  
 Quem sequitur custos angustae vernula capsae.  
 Eloquio sed uterque perit orator; utrumque  
 Largus et exundans leto dedit ingenii fons.  
 Ingenio manus est et cervix caesa; nec unquam  
 Sanguine caudidici maduerunt rostra pusilli.  
 "O fortunatam natum me Consule Romam!"  
 Antonii gladios potuit contemnere, si sic  
 Omnia dixisset.

2. (a) Explain the grammatical construction of *laxabant*, *deceret*, *mira-retur* (Ext. b). (b) To whom does *illi* refer in Ext. (a)? What battles are alluded to in the same passage? Comment on *Thessaliae campis*. (c) *Quantum non*; other readings are *quantum in*, *quantum vix*. Remark on each.

3. (a) Give the derivation and various significations of *auctor*, Ext (c). (b) *absolvitur* is a technical term. Explain. (c) *committitur*: in what other meaning is this word used in this satire? Quote, if you can, the line. (d) Comment on *praetoris urna, totis Quinquatribus* Ext. (d), *parcam Minervam*, "*O fortunatam.....Romam!*" *Antoni gladios*. (e) To what is *potuit contemnere* grammatically equivalent?

4. (a) Scan the fifth line of Ext. (d). (b) Give the exact meaning and derivation, where you can, of *stenmata*, *virga*, *Lar*, *arbiter*, *cohors*, *maniplos*, *suffragium*, *sportula*, *examen*, *indigenae*.

5. (a) Derive the word *satire*. (b) What are our sources of information for the life of Juvenal? (c) What are the subjects of his satires? Sketch the argument of the eighth.

6. Translate and comment on words *italicized*:

(a) *Temptavi enim imitari Demosthenen semper tuum, Calvum nuper meum, dumtaxat figuris orationis: nam vim virorum "pauci quos aequus amavit" adsequi possunt.*

(b) *Villa usibus capax, non sumptuosa tutela. Cuius in prima parte atrium frugi nec tamen sordidum; deinde porticus in D litterae similitudinem circumactae, quibus parvula, sed festiva area includitur, egregium adversus tempestates receptaculum: nam specularibus ac multo magis imminutibus tectis muniuntur.*

(c) *Aderant qui Miseni illud ruisse, illud ardere falso sed credentibus nuntiabant. Paulum reluxit, quod non dies nobis, sed adventantis ignis indicium videbatur. Et ignis quidem longius substitit, tenebrae rursus, cinis rursus multus et gravis. Hunc identidem adsurgentes exentiebamus; operi alioqui atque etiam oblisi pondere exsemus. Possem gloriari non gemitum mihi, non vocem parum fortem in tantis periculis exci-*

disse, nisi me cum omnibus, omnia mecum perire misero, magno tamen mortalitatis solacio credidissem. [*Possem — credidissem*: distinguish the use of the tenses].

7. Translate :

Mirum est quam singulis diebus in urbe ratio aut constet aut constare videatur, pluribus cunctaque non constet, nam si quem interroges "hodie quid egisti?" respondeat "officio togae virilis interfui, sponsalia aut nuptias frequentavi, ille me ad signandum testamentum, ille in consilium rogavit." haec quo die feceris necessaria, eadem, si cotidie fecisse te reputes, inania videntur, multo magis cum secesseris, tunc enim subit recordatio 'quot dies quam frigidis absumpsi!'

8. (a) At what age was the *toga virilis* assumed? What ceremony was connected with it? (b) Translate and explain: *sati* est, ut Atilius noster eruditissime simul et facetissime dixit, otiosum esse quam nihil agere. Also the saying of the Elder Scipio: *nunquam se minus otiosum esse quam cum otiosus, nec minus solum quam cum solus esset.*

9. Write explanatory notes on: *album calculum adicere*; *pugillares*; *invideo aliis bono*; *iudicium centumvirali*; *praevaricatio*; *cryptoporticus*; *zotheca*; *climactericum*; *μωσαῖον*; *nomenclatores*; *ex parte heredem*.

10. (a) Give a short sketch of the life of Pliny. (b) Name the leading contemporary writers.

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B.A. ORDINARY EXAMINATION.

TACITUS:—*Annals*.

JUVENAL:—*Satires. VIII and XIII.*

THURSDAY, APRIL 9TH, 1896:—MORNING, 9 TO 12.

Examiner,..... A. JUDSON EATON, M.A., PH.D.

I. Tacitus, *Annals*, Book I.

1. Translate:—

A. Sub idem tempus e familia Scriboniorum Libo Drusus defertur molires novas. eius negotii initium, ordinem, finem curatius disseram, quia tum primum reperta sunt quae per tot annos rem publicam exedere. Firmus Catus senator, ex intima Libonis amicitia, iuvenem inprovidum et facilem inanibus ad Chaldaeorum promissa, magorum sacra, somniorum etiam interpretes impulit, dum proavum Pompeium, amitam Scriboniam, quae quondam Augusti coniunx fuerat, consobrinos Caesares, plenam imaginibus domum ostentat, hortaturque ad luxum et aes alienum, socius libidinum et necessitatum, quo pluribus indiciis inligaret.

B. Hinc ventum Athenas, foederique sociae et vetustae urbis datum ut uno lictore uteretur. excepere Graeci quaesitissimis honoribus, vetera suorum facta dictaque praeferentes, quo plus dignationis adulatio haberet.

Pelita inde Euboea tramisit Lesbum, ubi Agrippina novissimo partu Iuliam edidit. tum extrema Asiae Perinthumque ac Byzantium, Thraecias urbes, mox Propontidis angustias et os Ponticum intrat, cupidine veteres locos et fama celebratos noscendi; pariterque provincias internis certaminibus aut magistratuum iniuriis fessas refovebat. atque illum in regressu sacra Samothracum visere, nitentem obvii aquilones depulere. igitur adito Ilio quaeque ibi varietate fortunae et nostri origine veneranda, relegit Asiam adpellitque Colophona, ut Clarii Apollinis oraculo uteretur.

C. Honores, ut quis amore in Germanicum aut ingenio validus, reperti de cretique: ut nomen eius Saliari carmine caneretur; sedes curules sacerdotum Augustalium locis superque eas querceae coronae statuarentur; ludos circenses eburna effigies praeretur, neve quis flamen aut augur in locum Germanici nisi gentis Iuliae crearetur. arcus additi Romae et apud ripam Rheni et in monte Suriae Amano, cum inscriptione rerum gestarum ac mortem ob rem publicam obisse, sepulchrum Antiochiae, ubi crematus, tribunal Epidaphnae, quo in loco vitam finierat. statuarum locorumve. in quis coleretur, hand facile quis numerum inierit. cum censeretur clipeus auro et magnitudine insignis inter auctores eloquentiae, adseveravit Tiberius solitum paremque ceteris dicaturum: neque enim eloquentiam fortuna discerni, et satis inlustre, si veteres inter scriptores haberetur.

2. (a) Remark more fully on the abuses of the reign of Tiberius (quae per tot annos res publicae exedere) (Ext. A).

(b) Write brief explanatory notes on: (1) *Chaldaeorum, Magorum, amilum, consobrinorum caesares, plenum imaginibus domum* (Ext. A.); (2) *uno lictore, veteres locos, sacra Samothracum* (Ext. B.); (3) *Saliari carmine, sedes curules sacerdotum Augustalium locis, flamen, monte Amano, tribunal, Epidaphnae* (Ext. C).

(c) Give the geographical position of Lesbus, Perinthus, Propontidis angustias, Samothrace, Colophon, Byzantium, Mons Amanus, Antioch, Ephidaphna.

3. (a) Supply the antecedent to *quae* in the phrase *quaeque ibi varietate fortunae* (Second Extract). In what construction would it be?

(b) Explain the following Tacitean usages; (1) *matrimonia ac pecunias hostium*; (2) *Gaius Caesar componendae Armeniae deligitur*; (3) *Aegyptum proficiscitur*; (4) *Ubi Artabanus minitari*; (5) *quibus additis praepollebat, ni Inguimerus cum manu clientium ad Maroboduum perfugisset*.

4. Write on *any two* of the following subjects:

(a) The picture of Tiberius as given us by Tacitus.

(b) The provinces of the Roman Empire and their administration.

(c) Germanicus' visit to Egypt.

## II. *Juvenal, Satires, VIII and XIII.*

See questions 1 (omitting d) 2, 4, and 5, of the Third Year paper.]

## LATIN PROSE COMPOSITION.

## FIRST YEAR.

THURSDAY, APRIL 9TH:—4 TO 5 P.M.

*Examiner*, ..... A. JUDSON EATON, M.A., PH.D.

1. Write on the following topics, illustrating by examples: (*a*) Construction with Verbs of Fearing; (*b*) Genitive and Ablative of Price; (*c*) the Relative Pronoun as connective; (*d*) Relative clauses of Characteristic.

2. Translate into Latin:

A.

(1) The points which were mentioned in the discussion, I will now briefly sum up. (2) He esteemed Gracchus so highly that he did whatever he wished. (3) He who has attained unto virtue, wherever he may be, will be loved by us. (4) I am inclined to think that, with the exception of virtue, friendship is preferable to all human blessings. (5) Whoever obeys the law of nature is good; for nature is the best guide of a new life. (6) I remember the living and do not forget the dead. (7) With three legions he set forth and attacked the Helvetii while crossing the river. (8) There are people that have nothing; there is one person that does not care to have. (9) And yet it would be a great mistake to suppose that Laelius was not touched (*commoveri*) with a feeling of sorrow for the loss of so dear a friend. His sorrow, however, was not for his friend, who had gained all that mortal man may rightly aspire to, but for himself. (10) And if the doctrine be true, that the soul does not perish with the body, but when freed from the bonds of the flesh returns to heaven, to mourn for him would betray selfishness rather than friendship.

B.

A few days after this the Celtiberians pitched their camp about two miles from that place, at the foot of a hill. When the Roman commander observed their approach, he sent his brother Marcus Fulvius with the squadrons of the cavalry of the allies toward the camp of the enemy to reconnoitre. He was ordered to approach as close as he could to the intrenchment, that he might observe the size of the camp to avoid a battle, and to retire in case he saw the cavalry of the enemy sallying forth. He carried out these orders.

## INTERMEDIATE EXAMINATION.

THURSDAY, APRIL 9TH, 1896 :—AFTERNOON, 2 TO 5.

Examiners,..... { PRINCIPAL PETERSON, LL.D.  
A. JUDSON EATON, PH.D.

## I.

I. Translate into Latin:—

(a) Hannibal now began the siege of Saguntum with the greatest energy; he surrounded it with his engines, and battering rams were plied against the walls. The people in the town bravely resisted his attacks, and often made sallies as far as the enemy's advance-guards, and in one of these skirmishes Hannibal was severely wounded in the thigh. For a few days there was cessation of hostilities while the general's wound was healing, and then the war began anew the more fiercely. When a long stretch of wall with three towers in succession had been battered down with the engines, the Carthaginians attempted to rush through the breach. Nothing now prevented Hannibal leading his army straight through the city to the citadel.

After the capture of Saguntum, Hannibal gave leave of absence to all his soldiers who wished to visit their people; for inasmuch as the campaign was, with the favor of the gods, to be transferred to a foreign land, it was uncertain when they would see their homes again.

- (b) (1) We must obey the laws of nature.  
 (2) Caesar promised that when he had conquered the Gauls he would return home.  
 (3) You cannot injure your country without bringing loss also upon yourself.  
 (4) After advancing eight miles, they halted for a short while, thinking that the enemy would soon set out from the camp.  
 (5) If you have at last been persuaded that my brother is innocent, I entreat you to acquit him.  
 (6) We hope to come to Rome within a fortnight, after transacting all the business entrusted to us by the consuls.

## II.

Translate at sight:

(a) Victoriā honestam ex hostibus partam turpe domi de finibus sociorum iudicium populi deformavit. Aricini atque Ardeates de ambiguo agro cum saepe bello certassent, multis in vicem cladibus fessi iudicem populi in Romanum cepere. Cum ad causam orandam venissent, concilio populi a magistratibus dato, magna contentione actum. Iamque editis testibus, cum tribus vocari et populum inire suffragium oporteret, consurgit P. Scaptius



de plebe, magno natu : et "si licet," inquit, "consules, de re publica dicere, errare ego populum in hac causa non patiar." Cum ut vanum eum negarent consules audiendum esse, vociferantemque prodi publicam causam submoveri iussissent, tribunos appellat. Tribuni, ut fere semper reguntur a multitudine magis quam regunt, dedere cupidae audiendi plebi ut quae vellet Scaptius diceret.—LIVY, iii, c. 71.

(b) Inscientibus cunctis, cultro succinctus mane in urbem atque a porta domum confestim ad M. Pomponium tribunum pergit ; ianitori opus esse sibi domino eius convento extemplo ait : nuntiaret, Titum Manlium L filium esse. Mox introductus—etenim percitum ira in patrem spes erat aut criminis aliquid novi aut consilii ad rem agendam deferre—salute accepta redditaque, esse ait quae cum eo agere arbitris remotis velit. Procul inde omnibus abire iussis cultrum stringit et super lectum stans ferro intento, nisi in quae ipse concepisset verba iuraret, se patris eius accusandi causa concilium plebis numquam habiturum, se eum extemplo transfixurum minatur.—LIVY, vii. c. 5.

### THIRD YEAR.

*Examine*, ..... PRINCIPAL PETERSON, LL.D.

#### I. *For Latin Prose.*

Then Hannibal crossed the Alps, and after laying waste the plains of Etruria far and wide, encamped upon the rising ground above the lake of Trasimene. Seeing Flaminius in hot pursuit, and knowing that if he entered the defile between the mountain and the lake he could surround him on every side, he halted his infantry on the hill beyond the pass, led cavalry and light armed troops round the heights at the back, and having addressed a few words of exhortation to the soldiers, awaited with confidence the advance of the enemy.

#### II. *Translate :*

(a) Romani apud Fabium arcebant magis quam inferebant pugnam, extrahebaturque in quam maxime serum diei certamen, quia ita persuasum erat duci et Samnites et Gallos primo impetu feroces esse, quos sustineri satis sit ; longiore certamine sensim residere Samnitium animos, Gallorum quidem etiam corpora intolerantissima laboris atque aestus fluere, primaque proelia plus quam virorum, postrema minus quam feminarum esse. In id tempus igitur, quo vinci solebat hostis, quam integerrimas vires militi servabat. Ferocior Decius et aetate et vigore animi quantumcumque virium habuit certamine primo effudit. Et quia lentior videbatur pedestris pugna, equitatum in pugnam concitat, et ipse fortissimae iuvenum turmae inmixtus orat proceres iuventutis, in hostem ut secum impetum

faciant : duplicem illorum gloriam fore, si ab laevo cornu et ab equite victoria incipiat. Bis avertere Gallicum equitatum. Iterum longius evectos et iam inter media equitum agmina procelium cientes novum pugnae conterruit genus : essedis carrisque superstans armatus hostis ingenti sonitu equorum rotarumque advenit et insolitos eius tumultus Romano rum conterruit equos.

C. Plinius Septicio Suo S.

(b) Ais quosdam apud te reprehendisse, tanquam amicos meos ex omni occasione ultra modum laudem. Agnosco crimen, amplector etiam. Quid enim honestius culpa benignitatis ? Qui sunt tamen isti qui amicos meos melius norint ? Sed ut norint, quid invident mihi felicissimo errore ? Ut enim non sint tales quales a me praedicantur, ego tamen beatus, quod mihi videntur. Igitur ad alios hanc sinistram diligentiam conferant, nec sunt parum multi, qui carpere amicos suos iudicium vocant : mihi numquam persuadebunt ut meos amari a me nimium putem. Vale.

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B.A. ORDINARY EXAMINATION.

*Examiner*,..... PRINCIPAL PETERSON, LL.D.

1. Translate into Latin Prose :—

Having led out his army from the camp, Caius engaged in a cavalry skirmish. When the conflict was over it was found that the enemy was retreating on the main column with considerable loss. Seeing this, the general urged his troops to pursue with all possible speed, since he feared that the foe would recover strength and once more advance on Telodunum. They gladly obeyed the general's orders, and overtaking the rear-guard cut it to pieces. Then recalling them by the bugle sound, Caius reminded them that they must take care not to waste their strength, and at the same time strive to keep a stricter watch than they had hitherto done ; for the same barbarian leader who had already caused them so much trouble would not neglect any opportunity of giving annoyance ; he could only be kept off by the utmost vigilance ; and if they, the soldiers, felt the toil too great, they must appeal to the mother city to send more troops to reduce to subjection so untiring an enemy.

2 Translate at Sight :—

(1) Aetoli demde citati. In qua cognitione magis utra pars Romanis, utra regi favisset quaesitum est, quam utra fecisset iniuriam aut accepisset : noxa liberati interfectores ; exilium pulsus aequè ratum fuit ac mors interfectis ; A. Baebius unus est damnatus, quod milites Romanos praebuisset ad ministerium caedis. Hic eventus Aetolorum causae in

omnibus Graeciae gentibus populisque eorum qui partis Romanorum fuerant inflavit ad intolerabilem superbiam animos, et obnoxios pedibus eorum subiecit quos aliqua parte suspicio favoris in regem contigerat. Tria genera principum in civitatibus erant, duo, quae adulando aut Romanorum imperium aut amicitiam regum sibi privatim opes oppressis faciebant civitatibus medium unum, utrique generi adversum, libertatem et leges tuebatur.

2) Quid praecipuum in rebus humanis est? Non classibus maria complesse, nec deficiente terra ad iniurias aliorum errasse in Oceano, ignota quaerentem; sed animo omne vidisse et, quia nulla est maior victoria, vitia domuisse. Innumerabiles sunt qui urbes, qui populos habuere in potestate, paucissimi qui se. Quid est praecipuum? Erigere animum supra minas et promissa fortunae; nihil dignum putare quod speres; posse laeto animo adversa tolerare; quicquid acciderit, sic ferre quasi tibi volueris accidere; non admittere in animum mala consilia, puras ad caelum manus tollere; nullum petere bonum quod, ut ad te traseat, aliquis dare debeat, aliquis amittere; optare quod sine adversario optatur, bonam mentem. Quid est praecipuum? altos opera fortuita spiritus attollere; hominis meminisse, ut, sive felix eris, scias hoc non futurum esse diu, sive infelix, scias hoc te non esse, si non putes. Quid est praecipuum? in primis labris animam habere. Haec res efficit non e iure Quiritium liberum sed e iure naturae. Liber enim est qui servitutem effugit sui. Haec est assidue servius et ineluctabilis,—sibi servire.

## GRECIAN HISTORY AND ROMAN LITERATURE

### FIRST YEAR.

HISTORY:—Myer's *History of Greece*.

LITERATURE:—Bender's *Roman Literature*.

THURSDAY, APRIL 9TH:—2 TO 4 P.M.

*Examiner*,..... J. L. DAY, M.A., M.D.

NOTE.—Answer two questions only from each of the groups A and B.

### I. HISTORY.

#### A.

1. Colonization: (a) Causes. (b) Relation of colony to mother-city. (c) The colonies of the Euxine and the Hellespont

2. Describe briefly the battles of Marathon and Thermopylae. Use diagrams to illustrate.

3. Outline the Decelean war.

## B.

4. The expedition of the Ten Thousand.
5. The reign of Philip of Macedon.
6. How was Alexander's empire divided at his death? A short sketch of the kingdom of the Ptolemies in Egypt.

## C.

7. Short notes on *any five* of the following :  
 (1) The Parthenon. (2) Greek theatres. (3) The sculptures. (4) Origin of the Drama. (5) Hippocrates. (6) The Sophists. (7) Aristophanes. (8) Social position of women. (9) Neo-Platonists. (10) Date and authorship of the Homeric poems.
8. Write briefly on *and three* of these subjects :  
 (a) Confederacy of Delos.  
 (b) Rebellion of Cylon.  
 (c) Siege of Sphacteria.  
 (d) Trial of Socrates.  
 (e) Peace of Antalcidas.  
 (f) Battle of Leuctra.

## II. LITERATURE.

9. Characterize the Golden Age of Roman Literature.
10. (a) Who was the most prominent writer of didactic epics? (b) The title and object of his poem. (c) What system of philosophy did he adopt?
11. A criticism of Livy as historian and stylist.
12. A short account of:—  
 (a) Catullus.  
 (b) Odes of Horace.  
 (c) Philosophy at Rome.

## HISTORY OF ROME.

*(For Affiliated Colleges.)*

TWO HOURS.

*Examiner*, ..... J. L. DAY, M.A., M.D.

1. When were the Plebeians first admitted to the consulship? Trace the steps by which this point was gained.

2. First Punic war: (a) Events with dates; (b) Causes; (c) Results.

3. Describe the battle of Cannae.

4. The Reforms of the Gracchi.

5. What do you know of Verres, Jugurtha, Horatius Cocles, Zenobia, Hamilcar, Sulla?

6. Sketch the reign of Nero.

7. On what occasions has Rome been invaded by barbaric tribes?

8. A short account of the Roman Dramatists.

## II. HONOUR CLASSICS.

THIRD YEAR.

GREEK PROSE COMPOSITION AND TRANSLATION AT SIGHT.

*Examiner*, ..... PRINCIPAL PETERSON, LL.D.

1. Translate into Greek:—

(a) The allies captured the city and burnt it.

(b) Seeing the cavalry advancing, the enemy took to flight and embarked on board their ships.

(c) If the Athenians, alarmed at the danger, had abandoned their country, or remaining in it had surrendered themselves to Xerxes, no other people would have at-



tempted to resist the king by sea. If, then, no one had opposed Xerxes by sea, what does it follow would have occurred by land?

(d) The admiral said that when all things had been prepared he had himself commanded the sailors to embark, but that they refused, saying that the Spartan harmost was now admiral, and not he. In the sea-fight on the following day the admiral would have been killed, had not his slave rescued him.

(e) But when Ægeus saw his valour he envied him, and feared he might join his enemies and take away the sceptre from him. So he plotted against his life, and slew him so craftily that even now we do not know how or where. Some say that he waylaid him on the road to Thebes; and some that he sent him against the bull of Marathon, to be killed by the beast. But Ægeus says that the young men killed him from envy, because he had conquered them in the games. So Minos came hither to avenge him, and would not depart till this land had promised to pay him tribute, seven youths and seven maidens every year.

## 2. Translate :

(α) Ἐγὼ δὲ τὸν μὲν πλοῦν ἐποισάμην ἐκ τῆς Μιυλήτης, ὃ ἄνδρες, ἐν τῷ πλοίῳ πλέων ᾧ Ἱπρώτης οὗτος, ὃν φασιν ὑπ' ἐμοῦ ἀποθανεῖν· ἐπλέομεν δὲ εἰς τὴν Αἶνον. ἐτύχομεν δὲ χειμῶνι τιμὴν χρησάμενοι, ὑφ' οὗ ἡναγκάσθημεν κατασχεῖν εἰς τῆς Μηθυμναίας τι χωρίον, οὗ τὸ πλοῖον ὥρμαι τοῦτο εἰς ὃ μετεκβάντα φασὶν ἀποθανεῖν αὐτόν. Ἐπειδὴ δὲ μετεξέβημεν εἰς τὸ ἕτερον πλοῖον, ἐπίνομεν. καὶ ὁ μὲν ἐστὶ φανερὸς ἐκβὰς ἐκ τοῦ πλοίου καὶ οὐκ εἰσβὰς πάλιν· ἐγὼ δὲ τὸ παράπαν οὐκ ἐξέβην ἐκ τοῦ πλοίου τῆς νυκτὸς

ἐκείνης. τῇ δ' ὕστεραία, ἐπειδὴ ἀφανὴς ἦν ὁ ἀνὴρ, ἐζητεῖτο οὐδέν τι μᾶλλον ὑπὸ τῶν ἄλλων ἢ καὶ ὑπ' ἐμοῦ· καὶ εἴ τα τῶν ἄλλων ἐδόκει δεινὸν εἶναι, καὶ ἐμοὶ ὁμοίως. καὶ εἴς τε τὴν Μιτυλήνην ἐγὼ αἴτιος ἦν πεμφθῆναι ἄγγελον, καὶ τῇ ἐμῇ γνῶμῃ ἐπέμπετο· καὶ ἄλλου οὐδενὸς ἐθέλοντος βαδίζειν, οὔτε τῶν αὐτῶ τῷ Ἡρώδῃ συμπλεόντων, ἐγὼ τὸν ἀκόλουθον τὸν ἐμαυτοῦ πέμπειν ἔτοιμος ἦν· καίτοι οὐ δήπου γε κατ' ἐμαυτοῦ μηνυτὴν ἔπεμπον εἰδώς. ἐπειδὴ δὲ ὁ ἀνὴρ οὔτε τῇ Μιτυλήνῃ ἐφαίνετο ζητούμενος οὔτ' ἄλλοθι οὐδαμοῦ, πλοῦς τε ἡμῖν ἐγίγνετο, καὶ τᾶλλα ἀνήγετο πλοῖα ἅπαντα, ὥχόμην καὶ γὰρ πλέων.

(b) ὁ δὲ κῆρυξ ὥς ἤκουσε καὶ ἔγνω ὅτι ἡ ἀπὸ τῆς πόλεως βοήθεια διεφθαρται, ἀνοιμῶξας καὶ ἐκπλαγεὶς τῷ μεγέθει τῶν παρόντων κακῶν ἀπῆλθεν εὐθὺς ἄπρακτος καὶ οὐκέτι ἀπῆται τοὺς νεκρούς. πάθος γὰρ τοῦτο μὲν πόλει Ἑλληνίδι ἐν ἴσαις ἡμέραις μέγιστον δὴ τῶν κατὰ τὸν πόλεμον τόδε ἐγένετο. καὶ ἀριθμὸν οὐκ ἔγραψα τῶν ἀποθανόντων, διότι ἄπιστον τὸ πλῆθος λέγεται ἀπολέσθαι ὥς πρὸς τὸ μέγεθος τῆς πόλεως. Ἀμπρακίαν μέντοι οἶδα ὅτι εἰ ἐβουλήθησαν Ἀκαρνᾶνες καὶ Ἀμφίλοχοι Ἀθηναίοις καὶ Δημοσθένει πειθόμενοι ἐξελεῖν, αὐτοβοεῖ ἂν εἶλον· νῦν δ' ἔδεισαν μὴ οἱ Ἀθηναῖοι ἔχοντες αὐτὴν χαλεπώτεροι σφίσι πάροικοι ᾧσι· μετὰ δὲ ταῦτα τρίτον μέρος νείμαντες τῶν σκύλων τοῖς Ἀθηναίοις τὰ ἄλλα κατὰ τὰς πόλεις διείλοντο. καὶ τὰ μὲν τῶν Ἀθηναίων πλέοντα ἐάλω, τὰ δὲ νῦν ἀνακείμενα ἐν τοῖς Ἀττικοῖς ἱεροῖς Δημοσθένει ἐξηρέθησαν τριακόσαι πανοπλῖαι, καὶ ἄγων αὐτὰς κατέπλευσε· καὶ ἐγένετο ἅμα αὐτῷ μετὰ τὴν τῆς Αἰτωλίας ξυμφορὰν ἀπὸ ταύτης τῆς πράξεως ἀδεεστέρα ἢ καθόδος.

## THIRD YEAR.

TERENCE:—*Phormio*.*Examiner*, ..... PRINCIPAL PETERSON, LL.D.

1. Translate the following passages, pointing out any peculiarities of form or syntax:—

- (1) AN Adeon rem redisse, ut qui mihi consultum optimum velit esse,  
Phaedria, patrem ut extimescam, ubi in mentem ejus adventi venit!  
Quod n̄ fuisset incogitans, ita expectarem ut par foret.

PH. Quid istuc? AN. Rogitas? Quī tam audacis facinoris mihi conscius sis?

Quod utinam ne Phormionem id suadere in mentem incidisset,  
Neu me cupidum eo impulisset, quod mihi principium est mali!  
Non potitus essem; fuisset tum illos mi aegre aliquot dies:  
At non cotidiana cura haec angeret animum.—PH. Audio.

AN. dum expecto quam mox veniat qui hanc mihi admat consuetudinem.

PH. Aliis quia defit quod amant, aegre est; tibi quia super-est dolet.

- (2) DE. Nostrapte culpa facimus ut malos expediat esse,  
Dum nimium dicētes bonos studemus et benignos.  
Ita fugias, ne praeter casam, quod aiunt, nonne id sat erat,  
Accipere ab illo iniuriam? etiam argentum est ultro obiectum,  
Vt sit qui vivat, dum aliud aliquid flagiti conficiat.

GE. Planissime. DE. Eis nunc praemium est, qui recta prava faciunt—

GE. Verissime. DE. ut stultissime quidem illi rem gesserimus.

GE. Modo ut hoc consilio possiet discedi, ut istam ducat.

DE. Etiamne id dubium est? GE. Haud scio hercle, ut homo est, an mutet animum.

DE. Hem! mutet autem? GE. Nescio: verum, si forte dico.

DE. Ita faciam, ut frater censuit, ut uxorem eius huc adducam,  
Cum ista ut loquatur. tu, Geta, abi prae: nuntia hanc venturam.

GE. Argentum inventum est Phaedriae: de iurgio siletur:  
Provisum est, ne in praesentia haec hinc abeat: quid nunc porro?  
Quid fiet? in eodem luto haesitas: vorsuram solves,  
Geta: praesens quod fuerat malum in diem abiit: plagae crescunt,  
Nisi prospicias. nunc hinc domum ibo ac Phanium edocebo,  
Ne quid vereatur Phormionem aut eius orationem.

- (3) CH. 'Tum autem Antiphonem uideo ab sese amittere  
inuitum eam' inquit. DE. Tum autem uideo filium  
inuitum sane mulierem ab se amittere.  
Sed transi sedes ad forum atque illud mihi  
argentum rursum iube rescribi, Phormio.

PH. Quodne ego descripsi porro illis quibus debui?

DE. Quid igitur fiet? PH. Si uis mi uxorem dare quam despondisti, ducam: sin est ut uelis manere illam apud te, dos hic maneat, Demipho. Nam non est æquum me propter uos decipi quom ego nostri honoris causa repudium alterae remiserim, quæ dotis tantundem dabat.

DE. I hinc in malam rem hinc cum istac magnificentia, fugitiue? etiam nunc credis te ignorarier aut tua facta adeo? PH. Inritor. DE. Tunc hanc duceres, si tibi daretur? PH. Fac periculum.

2. Explain:—

(1) ferietur alio munere.

(2) tute hoc intristi, tibi omne est exedendum.

(3) the terms *rex*, *dixi*, *sobrinus*, *talentum magnum*, *impluvium*, *succenturiatus*, *asymbolus*.

(4) emunxi argento senes.

(5) ostium concrepuit abs te.

(6) repudium renuntiet.

3. Explain the proverbial expressions *laterem lavem*; *actum ne agas*; *auribus lupum teneo*; *in malo querere crucem*; *scapulas perdidisti*.

Trace the derivation and meaning of these words:—*fidicina*, *ilico*, *ilicet*, *oppido*, *simultus*, *inritare*, *pistrinum*, *delirare*, *derivare*, *repudium*, *edulo*, *jurgum*.

4. In what colloquial senses does Terence use the words *cedo*: *dare*: *abi*: *enim*?

5. What are the chief metres of the play? What is the difference of their use?

## LATIN PROSE COMPOSITION AND TRANSLATION AT SIGHT.

### THIRD YEAR.

Examiner,.....PRINCIPAL PETERSON, LL.D.

I. Translate into Latin:—

(1) He allowed nothing to stand in his way. If it suited his policy to massacre a whole tribe, men, women, and children, he gave the order without hesitation, just as he recorded it afterwards in his history, without a trace of remorse or regret. If a rival stood in his way he had him removed, and was quite indifferent as to how the removal was effected. But he could also be the kindest and gentlest of men. A friend with

whom he was travelling was seized with sudden illness. Caesar gave up at once to him the only chamber in the little inn, and himself spent the night in the open air.

(2) At Rome the news of Nero's march filled all hearts with hope and fear. For several days, from sunrise to sunset, the Senate never left the Senate-house, nor the people the forum. As they were thus anxiously waiting, a rumour came that a great victory had been won two days before. At first men hesitated to believe it, but when more certain tidings of victory reached them, the joy seemed too great for them to contain.

2. Translate :—

(1) *Maximae cuique fortunae minime credendum est : in bonis tuis rebus, nostris dubiis, ampla ac speciosa danti est pax, nobis petentibus magis necessaria quam honesta. Melior tutiorque est certa pax quam sperata victoria : haec in tua, illa in deorum manu est. Ne tot annorum felicitatem in unius horae dederis discrimen. Cum tuas vires, tum vim fortunae Martemque belli communem propone animo : utrumque ferrum, utrumque corpora humana erunt : nusquam minus quam in bello eventus respondent. Non tantum ad id, quod data pace jam habere potes, si proelio vinces, gloriae adieceris, quantum admeris, si quid adversi eveniat. Simul parva ac sperata decora unius horae fortuna evertere potest. Omnia in pace iungenda tuae potestatis sunt, P. Cornelli : tuuc ea habenda fortuna erit quam di dederint. Inter pauca felicitatis virtutisque exempla M. Atilius quondam in hac eadem terra fuisset, si victor pacem petentibus dedisset patribus nostris : non statuendo felicitati modum nec cohibendo efferentem se fortunam, quanto altius elatus erat, eo foedius corruit. Est quidem eius qui dat, non qui petit, condiciones dicere pacis : sed forsitan non indigni sumus qui nobismet ipsi illam irrogemus. Non recusamusquin omnia, propter quae ad bellum itum est, vestra sint, Sicilia Sardinia Hispania, quidquid insularum toto inter Africam Italiamque continetur mari. Carthaginenses inclusi Africae litoribus vos, quando ita dis placuit, externa etiam terra marique videamus regentes imperia.*

(2) Vidimus ingentem glacîe consistere pontum,  
lubricaue immotas testa premebat aquas.  
Nec vidisse sat est : durum calcavimus aequor,  
undaque non udo sub pede summa fuit.  
Si tibi tale fretum quondam, Leandre, fuisset  
non foret angustae mors tua crimen aquae.

3. Translate and turn into *oratio obliqua* the following :

Neque ego maxima imperia in vos desidero, et vos in me nihil praeter me ipsum intueri decet : neque enim dictatura mihi umquam animos fecit ut ne exilium quidem ademit. Eidem igitur omnes sumus, et cum eadem omnia in hoc bellum adferamus quae in priora attulimus, eundem eventum belli expectemus. simul concurreritis, quod quisque didicit ac consuevit faciet : vos vincetis, illi fugient.



## THIRD AND FOURTH YEARS.

HOMER, Iliad XVIII. ; Odyssey I-VI.

*Examiner*,.....PRINCIPAL PETERSON, M.A., LL.D.

## 1. Translate :

- (1) αὐτίκα τεθναίην, ἐπεὶ οὐκ ἄρ' ἔμελλον ἑταίρῳ  
 κτεινομένῳ ἐπαμῦναι· ὁ μὲν μάλα τηλόθι πάτρης  
 ἔφθιτ', ἐμεῖο δὲ δῆσεν ἀρής ἀλκτῆρα γενέσθαι.  
 νῦν δ', ἐπεὶ οὐ νέομαί γε φίλην ἐς πατρίδα γαίαν,  
 οὐδέ τι Πατρόκλῳ γενόμην φάος, οὐδ' ἐτάροισιν  
 τοῖς ἄλλοις, οἳ δὴ πολέες δάμεν Ἑκτορι δίῳ,  
 ἀλλ' ἦμαι παρὰ νηυσὶ ἐτώσιον ἄχθος ἀρούρης,  
 τοῖος ἐών, οἷος οὐ τις Ἀχαιῶν χαλκοχιτώνων  
 ἐν πολέμῳ, ἀγορῇ δὲ τ' ἀμείνονές εἰσι καὶ ἄλλοι.  
 ὥς ἔρις ἔκ τε θεῶν ἔκ τ' ἀνθρώπων ἀπόλοιτο,  
 καὶ χόλος, ὅς τ' ἐφέηκε πολύφρονά περ χαλεπῆναι,  
 ὅς τε πολὺν γλυκίων μέλιτος καταλειβομένοιο  
 ἀνδρῶν ἐν στηθεσσιν ἀέξεται ἥντε καπνός·  
 ὥς ἐμὲ νῦν ἐχόλωσεν ἄναξ ἀνδρῶν Ἀγαμέμνων.
- (2) ἐν δ' ἐτίθει τέμενος βαθυλήιον· ἔνθα δ' ἔριθοι  
 ἥμων ὀξείας δρεπάνας ἐν χερσὶν ἔχοντες,  
 δράγματ' δ' ἄλλα μετ' ὄγμον ἐπήτριμα πίπτον ἔραζε,  
 ἄλλα δ' ἀμαλλοδετῆρες ἐν ἐλλεδανοῖσι δέοντο.  
 τρεῖς δ' ἄρ' ἀμαλλοδετῆρες ἐφέστασαν· αὐτὰρ ὅπισθεν  
 παῖδες δραγμεύοντες, ἐν ἀγκαλίδεσσι φέροντες,  
 ἀσπερχές πάρεχον. βασιλεὺς δ' ἐν τοῖσι σιωπῇ  
 σκῆπτρον ἔχων ἐστήκει ἐπ' ὄγμου γηθόσυνος κῆρ.  
 κήρυκες δ' ἀπάνευθεν ὑπὸ δρυὶ δαῖτα πενοντο,  
 βοῦν δ' ἱερεύσαντες μέγαν ἄμφεπον· αἱ δὲ γυναῖκες  
 δείπνον ἐρίθοισιν λεύκ' ἄλφιστα πολλὰ πάλυνον.

2. Translate, giving the derivations and the Attic forms of words underlined :

- (1) ὧς φάτο, τὸν δ' ἄχεος νεφέλῃ ἐκάλυψε μέλαινα,  
 ἀμφοτέρησιν δὲ χερσὶν ἑλὼν κόνιν αἰθαλόεσσαν  
χεύατο καὶ κεφαλῆς, χαρίεν δ' ἥσχυνε πρόσωπον  
νεκταρέφ δὲ χιτῶνι μέλαιν' ἀμφίζανε τέφρῃ
- (2) τρὶς δὲ δύ' ἑλάντες, θοῦρίν ἐπιδιμένον ἀλκήν,  
 νεκροῦ ἀπεστυφέλιζαν.
- (3) αὐτὰρ ἐπεὶ δὴ ζέσσειεν ὕδωρ ἐνὶ ἡνοπι χαλκῶ,  
 καὶ τότε δὴ λουσάν τε καὶ ἡμειψαν λίπ' ἐλαίῳ,  
 ἐν δ' ὠτειλὰς πλήσαν ἀλείφατος ἐννεώροιο.  
ἐν λεχέεσσι δὲ θέντες ἐανῶ λιτὶ κάλυψαν  
 ἐς πόδας ἐκ κεφαλῆς, καθύπερθε δὲ φάρεϊ λευκῶ.
- (4) λαοὶ δ' εἰν ἀγορῇ ἔσαν ἀθρόοι· ἐνθα δὲ νεῖκος  
 ὠρώρει, δύο δ' ἄνδρες ἐνεΐκεον εἵνεκα ποινιῆς  
ἀνδρὸς ἀποφθιμένου. ὁ μὲν εὐχετο πάντ' ἀποδοῦναι  
 δῆμῳ πιφαύσκων, ὁ δ' ἀναίνετο μηδὲν ἐλέσθαι·  
 ἄμφω δ' ἰέσθην ἐπὶ ἱστορί πέιραρ ἐλέσθαι.

3. Translate :—

- (1) νῦν δ' ὦδε ξὺν νηὶ κατήλυθον ἡδ' ἐτάρῃσι,  
 πλέων ἐπὶ οἶνοπα πόντον ἐπ' ἀλλοθρόους ἀνθρώπους,  
 ἐς Τεμέσην μετὰ χαλκὸν, ἄγω δ' αἶθωνα σίδηρον.  
 νηὺς δέ μοι ἡδ' ἔστηκεν ἐπ' ἀγροῦ νόσφι πόληος,  
 ἐν λιμένι Πείθῳ, ὑπὸ Νηίῳ ὑλῆεντι.  
 ξείνοι δ' ἀλλήλων πατρώιοι εὐχόμεθ' εἶναι  
 ἐξ ἀρχῆς, εἴ πέρ τε γέροττ' εἶρηαι ἐπελθὼν  
 Λαέρτην ἥρωα, τὸν οὐκέτι φασὶ πόλινδε  
 ἔρχεσθ' ἀλλ' ἀπάνευθεν ἐπ' ἀγροῦ πῆματα πάσχειν  
 γρηγὶ σὺν ἀμφιπόλῳ, ἣ οἱ βρώσιν τε πόσιν τε  
 παρτιθεῖ, εὖτ' ἂν μιν κάματος κατὰ γυῖα λάβησιν  
 ἐρπύζοντ' ἀνὰ γουνὸν ἄλωῃς οἶνοπέδοιο.

- (2) εἰ μὲν κεν πατὺρ βίον καὶ νόστον ἀκούσῃς,  
 ἦ τ' ἂν τρυχόμενός περ ἔτι τλαίης ἐνιαυτόν·  
 εἰ δέ κε τεθνηῶτος ἀκούσῃς μηδ' ἔτ' ἐόντος,  
 νοστήσας δὴ ἔπειτα φίλην ἐς πατρίδα γαίαν  
 σῆμά τε οἱ χεῖναι καὶ ἐτι κτέρειζαι κτερεῖζαι  
 πολλὰ μάλ', ὅσσα ἔοικε, καὶ ἀνέρι μητέρᾳ δοῦναι  
 αὐτὰρ ἐπὶ δὴ ταῦτα τελευτήσῃς τε καὶ ἔρξης,  
 φράζεσθαι δὴ ταῦτα κατὰ φρένα καὶ κατὰ θυμόν  
 ὅπως κε μνηστήρας ἐνὶ μεγάροισι τεοῖσι  
 κτείνῃς ἢ δόλῳ ἢ ἀμφιδόῳ· οὐδέ τί σε χρὴ  
 νηπιᾶς ὀχέειν, ἐπεὶ οὐκέτι τηλικός ἐσσί.
- (3) αὐτὰρ ἐπὲν πόλιος ἐπιβείομεν ἦν πέρι πύργος  
 ὑψηλός, καλὸς δὲ λιμὴν ἐκάτερθε πόλῃος,  
 λεπτή δ' εἰσίθμῃ· νῆες δ' ὁδὸν ἀμφιελισσαι  
 εἰρύχονται· πᾶσιν γὰρ ἐπίστιόν ἐστιν ἑκάστῳ,  
 ἔνθα δὲ τέ σφ' ἀγορὴ καλὸν Ἰοσιδίῳ ἀμφίς,  
 ῥυτοῖσιν λᾶεσσι κατωρχέσσ' ἀραρυῖα.  
 ἔνθα δὲ νηῶν ὅπλα μελαινάνων ἀλέγουσι,  
 πείσματα καὶ σπείρα, καὶ ἀποξύνουσιν ἑρετμά  
 οὐ γὰρ Φαιήκεσσι μέλει βιὸς οὐδὲ φαρέτρη,  
 ἀλλ' ἴστοι καὶ ἑρετὰ νεῶν καὶ νῆεῖσαι,  
 ἦσιν ἀγαλλόμενοι πολὴν περόσσι θάλασσαν,  
 τῶν ἀλεείνω φῆμιν ἀδευκέα, μή τις ὀπίσσω  
 μωμεύῃ· μάλα δ' εἰσὶν ὑπερφίαλοι κατὰ δῆμον·
- (4) 'Γουνούμαί σε, ἄνασσα· θεὸς νύ τις, ἢ βροτὸς ἐσσί;  
 εἰ μὲν τις θεὸς ἐσσί, τοὶ οὐρανὸν εὐρὺν ἔχουσιν,  
 Ἀρτέμιδι σε ἐγὼ γε, Διὸς κούρη μέγαλοιο,  
 εἰδὸς τε μέγεθός τε φυὴν τ' ἄγχιστα εἴσκω·  
 εἰ δέ τίς ἐσσί βροτῶν, τοὶ ἐπὶ χθονὶ ναιετάουσι,  
 τρισμακάρες μὲν σοὶ γε πατὴρ καὶ πότνια μήτηρ,  
 τρισμακάρες δὲ κασίγνητοί· μάλα πού σφισι θυμὸς  
 αἰὲν ἐνφροσύνῃσιν λαίναται εἵνεκα σέϊο,  
 λευσσόντων τοιόνδε θάλας χορὸν εἰσοιχνεῦσαν.

Write short notes on any words or phrases or constructions in the above passages that may seem to you to require explanation.

4. (1) Parse the following Homeric words, giving the corresponding Attic forms : λύθεν, ἐνείκαι, ἑσταότων, ἀλήμηναι, ὀρώρει, ἀναβήμεναι, πόλλος, ὄλοντο, ἵμεν, ἄμμι, ἀπώσεαι, πρότιθεν, αἰτιόωνται, ἔλθησι.

(2) State what you know of the Homeric use of the article.

(3) Describe *either* the construction of the boat in Book V, *or* the arrangement of a Homeric house.

(4) Mention the principal theories which have been proposed respecting the origin and transmission of the Homeric poems, and indicate very briefly the line of argument pursued by the advocates of these theories.

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THUCYDIDES (Selections) : Plato, Republic I-II.

THIRD AND FOURTH YEARS.

*Examiner*,.....PRINCIPAL PETERSON, LL.D.

1. Translate :—

Ὁ δὲ Δημοσθένης ὡς οὐκ ἔπειθεν οὔτε τοὺς στρατηγοὺς οὔτε τοὺς στρατιώτας, ὕστερον καὶ τοῖς ταξιάρχοις κοινώσας ἡσύχαζεν ὑπὸ ἀπλοίας, μέχρι αὐτοῖς τοῖς στρατιωταῖς σχολάζουσιν ὁρμὴ ἐπέπεσε περιστᾶσιν ἐκτειχίσαι το χωρίον. καὶ ἐγχειρήσαντες εἰργάζοντο, σιδήρια μὲν λιθουργὰ οὐκ ἔχντες, λογάδην δὲ φέροντες λίθους, καὶ ξυνετίθεσαν ὡς ἑκαστόν τι ξυμβαίνοι· καὶ τὸν πηλόν, εἴ που δέοι χρῆσθαι, ἀγγείων ἀπορία ἐπὶ τοῦ νότου ἔφερον ἐγκεκυφότες τε, ὡς μάλιστα μέλλοι ἐπιμένειν, καὶ τῷ χεῖρε ἐς τοῦπίσω

ξυμπλέκοντες, ὅπως μὴ ἀποπίπτοι. παντὶ τε τρόπῳ ἡπεί-  
γυντο φθῆναι τοὺς Λακεδαιμονίους τὰ ἐπιμαχώτατα ἐξερ-  
γασάμενοι πρὶν ἐπιβοηθῆσαι· τὸ γὰρ πλεόν τοῦ χωρίου  
αὐτὸ καρτερὸν ὑπῆρχε καὶ οὐδὲν ἔδει τείχους.

(2) Ἐπειδὴ δὲ αἱ νῆες πλήρεις ἦσαν καὶ ἐσέκειτο πάντα  
ἤδη ὅσα ἔχοντες ἔμελλον ἀνάξασθαι, τῇ μὲν σάλπιγγι σιω-  
πῇ ὑπεσημάνθη. εὐχὰς δὲ τὰς νομιζομένας πρὸ τῆς ἀναγω-  
γῆς οὐ κατὰ ναῦν ἐκάστην ξύμπαντες δὲ ὑποκῆρυκος ἐποι-  
οῦντο. κρατῆράς τε κεράσαντες παρ' ἅπαν τὸ στράτευμα  
καὶ ἐκπώμασι χρυσοῖς τε καὶ ἀργυροῖς οἳ τε ἐπιβάται καὶ  
οἱ ἄρχοντες σπένδοντες. ξυνεπύχοντο δὲ καὶ ὁ ἄλλος  
ὄμιλος ἑκ τῆς γῆς τῶν τε πολιτῶν καὶ εἴ τις ἄλλος εὐνους  
παρῆν σφίσι. παιωνίσαντες δὲ καὶ τελεώσαντες τὰς σπου-  
δὰς ἀνίγουντο, καὶ ἐπὶ κέρως τὸ πρῶτον ἐκπλευσαντες  
ἄμιλλαν ἤδη μέχρι Αἰγίνης ἐποιοῦντο. καὶ οἱ μὲν ἐς τὴν  
Κέρκυραν, ἔνθα περ καὶ τὸ ἄλλο στράτευμα τῶν ξυμμά-  
χων ξυνελέγετο, ἡπείγοντο ἀφικέσθαι.

## 2. Translate and explain :—

(1) ἐβόα λέγων ὡς οὐκ εἰκὸς εἶη ξύλων φειδομένους τοὺς  
πολεμίους ἐν τῇ χώρᾳ περιδεῖν τείχος πεποιημένους, ἀλλὰ  
τάς τε σφετέρας τοὺς βιαζομένους τὴν ἀπόβασιν καταγνύ-  
ναι ἐκέλευε, καὶ τοὺς ξυμμάχους μὴ ἀποκνήσαι ἀντὶ μεγά-  
λων εὐεργεσιῶν τὰς ναῦς τοῖς Λακεδαιμονίοις ἐν τῇ παρόν-  
τι ἐπιδοῦναι, ὀκείλαντας δὲ καὶ παντὶ τρόπῳ ἀποβάντας  
τῶν τε ἀνδρῶν καὶ τοῦ χωρίου κρατῆσαι.

(2) μάλιστα δὲ ἐτήρουν ἀνέμῳ καταφέρεσθαι· ῥῆον γὰρ  
τὴν φυλεκὴν τῶν τριήρων ἐλάνθανον, ὅποτε πνεῦμα ἐκ πόν-  
του εἴῃ· ἄπορον γὰρ ἐγίγνετο περιορμεῖν, τοῖς δὲ ἀφειδῆς  
ὁ κατάπλους καθεστήκει· ἐπώκελλον γὰρ τὰ πλοῖα τετιμ-  
ημένα χρημάτων, καὶ οἱ ὀπλῖται περὶ τὰς κατάρσεις τῆς



ίστου, ἐφύλασσον. ὅσοι δὲ γαλήνῃ κινδυνεύσειαν, ἡλίσ-  
οντο.

(3) οἱ ὅτε ἐπειδὴ ἔλαβον ὅπλα, οὔτε ἡκροῶντο ἔτι τῶν  
ἀρχόντων, κατὰ ξυλλόγους τε γιγνόμενοι ἢ τὸν σῆτον ἐκέ-  
λευον τοὺς δυνατοὺς φέρειν ἐς τὸ φανερόν καὶ διανέμειν  
ἅπασιν ἢ αὐτοὶ ξυγχωρήσαντες πρὸς Ἀθηναίους ἔφασαν  
παραδῶσειν τὴν πόλιν.

(4) καὶ ἐς Νικίαν τὸν Νικηράτου στρατηγὸν ὄντα ἄπε-  
σήμαινεν, ἐχθρὸς ὢν καὶ ἐπιτιμῶν, ῥάδιον εἶναι παρασκευῇ  
εἰ ἄνδρες εἶεν οἱ στρατηγοί, πλεύσαντας λαβεῖν τοὺς ἐν  
τῇ νήσῳ, καὶ αὐτός γ' ἂν, εἰ ἦρχεν, ποιῆσαι τοῦτο.

### 3. Translate :—

(1) Ἐγώ γε, εἶπον, ὥμην σε τοῦτο λέγειν, ὅτε τοὺς ἄρχ-  
οντας ὡμολόγεις οὐκ ἀναμαρτήτους εἶναι, ἀλλὰ τι καὶ ἔξα-  
μαρτάνειν. Συκοφάντης γὰρ εἶ, ἔφη, ὦ Σώκратες, ἐν τοῖς  
λόγοις· ἐπεὶ αὐτίκα ἱατρὸν καλεῖς σὺ τὸν ἔξαμαρτάνοντα  
περὶ τοὺς κάμνοντας κατ' αὐτὸ τοῦτο, ὃ ἔξαμαρτάνει; ἢ  
λογιστικόν, ὃς ἂν ἐν λογισμῷ ἀμαρτάνῃ, τότε ὅταν ἀμαρ-  
τάνῃ, κατὰ ταύτην τὴν ἀμαρτίαν; ἀλλ' οἶμαι, λέγομεν τῷ  
ῥήματι οὕτως, ὅτι ὁ ἱατρὸς ἐξήμαρτε καὶ ὁ λογιστὴς ἐξή-  
μαρτε καὶ ὁ γραμματιστής· τὸ δ', οἶμαι, ἕκαστος τούτων,  
καθ' ὅσον τοῦτ' ἔστιν, ὃ προσαγορεύομεν αὐτόν, οὐδέποτε  
ἀμαρτάνει· ὥστε κατὰ τὸν ἀκριβῆ λόγον, ἐπειδὴ καὶ σὺ  
ἀκριβολογεῖ, οὐδεὶς τῶν δημιουργῶν ἀμαρτάνει. ἐπιλειπού-  
σης γὰρ ἐπιστήμης ὁ ἀμαρτάνων ἀμαρτάνει, ἐν ᾧ οὐκ ἔστι  
δημιουργός· ὥστε δημιουργὸς ἢ σοφὸς ἄρχων οὐδεὶς ἀμαρ-  
τάνει τότε, ὅταν ἄρχων ᾖ, ἀλλὰ πᾶς γ' ἂν εἴποι, ὅτι ὁ  
ἱατρὸς ἤμαρτε καὶ ὁ ἄρχων ἤμαρτε, τοιοῦτον οὖν δὴ σοὶ  
καὶ ἐμὲ ὑπόλαβε νῦν δὴ ἀποκρίνεσθαι. τὸ δὲ ἀκριβέστα-  
τον ἐκεῖνο τυγχάνει ὅν, τὸν ἄρχόντα, καθ' ὅσον ἄρχων

ἐστί, μὴ ἀμαρτάνειν, μὴ ἀμαρτάνοντα δὲ τὸ αὐτῷ βελτιστον τίθεσθαι, τοῦτο δὲ τῷ ἀρχομένῳ ποιητέον. ὥστε ὅπερ ἐξ ἀρχῆς ἔλεγον, δίκαιον λέγω τὸ τοῦ κρείττονος ποιεῖν ξυμφέρον.

(B) Τῇ δὲ ποιμενικῇ οὐ δήπου ἄλλου του μελεῖ ἢ ἐφ' ᾧ τέτακται ὅπως τούτῳ τὸ βέλτιστον ἐκποριεῖ. ἐπεὶ τὰ γε αὐτῆς ὥστ' εἶναι βελτίστη ἱκανῶς δήπου ἐκπεπόρισται, ἐως γ' ἂν μηδὲν ἐνδὲρ τοῦ ποιμενικῆ εἶναι. οὕτω δὲ ὥμην ἔγωγ γε νῦν δὴ ἀναγκαῖον εἶναι ἡμῖν ὁμολογεῖν, πᾶσαν ἀρχὴν καθ' ὅσον ἀρχή, μηδενὶ ἄλλῳ τὸ βέλτιστον σκηπεῖσθαι ἢ ἐκείτῳ τῷ ἀρχομένῳ τε καὶ θεραπευομένῳ, ἐν τε πολιτικῇ καὶ ἰδιωτικῇ ἀρχῇ. σὺ δὲ τοὺς ἀρχοντας ἐν ταῖς πόλεσι, τοὺς ἀληθῶς ἀρχοντας, ἐκόντας οἶε ἀρχεῖν; Μα Δι' οὐκ ἔφη, ἀλλ' εὖ οἶδα.

(C) Εὐωχοῦ τοῦ λόγου, ἔφη, θαρρῶν. οὐ γὰρ ἔγωγέ σοι ἐναντιώσομαι, ἵνα μὴ τοῖσδε ἀπέχθωμαι. Ἰθι δὴ. ἦ· δ' ἐγώ, καὶ τὰ λοιπά μοι τῆς ἐστιάσεως ἀποπλήρωσον ἀποκρινόμενος ὥσπερ καὶ νῦν, ὅτι μὲν γὰρ καὶ σοφώτεροι καὶ ἀμείνους καὶ δυνατώτεροι πράττειν οἱ δίκαιοι φαίνονται, οἱ δὲ ἀδικοὶ οὐδὲν πράττειν μετ' ἀλλήλων οἰοί τε, ἀλλὰ δὴ καὶ οὖς φαμεν ἐρρώμένως πώποτε τι μετ' ἀλλήλων κοινῇ πράξαι ἀδίκους ὄντας, τοῦτο οὐ παντάπασιν ἀληθὲς λέγομεν.

(D) Οὐκ οἶσθα, ἦν δ' ἐγώ, ὅτι τό γε ὡς ἀληθῶς ψεῦδος, εἰ οἶόν τε τοῦτο εἰπεῖν. πάντες θεοὶ τε καὶ ἀνθρώποι μισοῦσιν; Πῶς, ἔφη, λέγεις; Οὔτως ἦν δ' ἐγώ, ὅτι τῷ κυριωτάτῳ πον ἐαυτῶν ψεύδεσθαι καὶ περὶ τὰ κυριώτατα οὐδεὶς ἐκὼν ἐθέλει, ἀλλὰ πάντων μάλιστα φοβεῖται ἐκεῖ αὐτὸ κεκτῆσθαι. Οἷδὲ νῦν πῶ ἦ δ' ὅς, μαίθαίω. Οἷε γὰρ τί με, ἔφην, σεμνὸν λέγειν. ἐγώ δὲ λέγω, ὅτι τῇ ψυχῇ περὶ τὰ ὄντα ψεύδεσθαι τε καὶ ἐψεῖσθαι καὶ ἀμαθῇ εἶναι καὶ

ἐνταῦθα ἔχειν τε καὶ κέκτῃσθαι τὸ ψεῦδος πάντες ἤκιστα  
 ἀν'δέξαιντο καὶ μισοῦσι μάλιστα αὐτὸ ἐν τῷ τοιούτῳ. Πολύ-  
 γε, ἔφη. Ἀλλὰ μὴν ὀρθότατά γ' αὖν, ὃ νῦν δὲ, ἔλεγον,  
 τοῦτο ὡς ἀληθῶς ψεῦδος καλοῖτο, ἢ ἐν τῇ ψυχῇ ἄγνοια ἢ  
 τοῦ ἐψεύσμενον· ἐπεὶ τὸ γε ἐν τοῖς λόγοις μίμημά τι τοῦ  
 ἐν τῇ ψυχῇ ἐστὶ παθήματος καὶ ὕστερον γεγονὸς εἰδῶλον,  
 οὐ πάννυ ἄκρατον ψεῦδος.

4. (1) In what do the theories of Simonides, Thrasymachus and Glaucon differ?

(2) State the reasoning in Book I. of the Republic, with special reference to the Socratic method of dialectic.

(3) Compare the style of Plato with that of Thucydides.

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### THIRD AND FOURTH YEARS.

VIRGIL, *Aeneid*, Book IX. ; and HORACE, *Selected Odes*.

Examiner,.....PRINCIPAL PETERSON, LL.D.

1. Translate :—

- (1) Turris erat vasto suspectu et pontibus altis,  
 Opportuna loco, summis quam viribus omnes  
 Expugnare Itali summaque evertere opum vi  
 Certabant, Troes contra defendere saxis  
 Perque cavas densi tela intorquere fenestras.  
 Princeps ardentem coniecit lampada Turnus  
 Et flammam adfixit lateri, quae plurima vento  
 Corripuit tabulas et postibus haesit ades.  
 Turbati trepidare intus frustra malorum  
 Velle fugam. Dum se glomerant, tum pondere turris  
 Procubuit subito et caelum tonat omne fragore.
- (2) Me, me, adsum qui feci, in me convertite ferrum,  
 O Rutuli, mea fraus omnis ; nihil iste nec ausus,  
 Nec potuit ; caelum hoc et conscia sidera testor :  
 Tantum infelicem nimium dilexit amicum.  
 Talia dicta dabat : sed viribus ensis adactus  
 Transabiit costas, et candida pectora rumpit.

Volvitur Euryalus leto, pulchrosque per artus  
 Il cruor, inque humeros cervix collapsa recumbit.  
 Purpureus veluti cum flos succisus aratro  
 Languescit moriens, lassove papavera collo  
 Demisere caput, pluvia cum forte gravantur.  
 At Nisus ruit in medios, solumque per omnes  
 Volscentem petit, in solo Volscente moratur.

- (3) Evolat infelix, et femineo ululatu,  
 Scissa comam, muros amens atque agmina cursu  
 Prima petit, non illa virum, non illa pericli  
 Telorumque memor; caelum dehinc questibus implet:  
 "Hunc ego te, Euryale, adspicio? tune ille senectae  
 Sera meae requies, potuisti linquere solam  
 Crudelis? nec te, sub tanta pericula missum,  
 Affari extremum miserae data copia matri?  
 Heu, terra ignota canibus date praeda Latinis  
 Alitibusque iaces! nec te tua tunera mater  
 Produxi, pressive oculos, aut vulnera lavi,  
 Veste tegens, tibi quam noctes festina diesque  
 Urgebam et tela curas solabar aniles."

2. Translate and explain:—

- (a) Volvenda dies en attulit ultro.  
 (b) Sed periisse semel satis est: peccare fuisset  
 Ante satis, penitus modo non genus omne perosos  
 Feminum.  
 (c) Si fortuna permittitis uti  
 Quaesitum Aenean et moenia Pallantea.  
 (d) Sed non augurio potuit depellere pestem.  
 (e) Poenarum exhaustum satis est  
 (f) Non hic Atridae nec fandi fictor Ulixes.  
 (g) Omne aevum ferro teritur.  
 (h) Macte nova virtute puer: sic itur ad astra.

3. Translate and explain where necessary:—

- (a) Vidimus flavum Tiberina retortis  
 Litore Etrusco violenter undis  
 Ire deiectum monumenta regis  
 Templumque Vestae;  
 Iliae dum se nimium querenti  
 Iactat ultorem, vagus et sinistra  
 Labitur ripa Iove non probante u-  
 xorius amnis.

Audiet cives acuisse ferrum,  
 Quo graves Persae melius perirent,  
 Audiet pugnas vitio parentum  
 Rara inventus.

- (b) Tu ne quaesieris, scire nefas, quem mihi, quem tibi  
 Finem di dederint, Lenconoë, nec Babylonios  
 Tentaris numeros. Ut melius, qui liquit erit, pati!  
 Seu plures hiemes seu tribuit Iuppiter ultimam,  
 Quae nunc oppositis debilitat pumicibus mare  
 Tyrrhenum, sapias, vina liques, et spatio brevi  
 Spem longam reseces. Dam loquimur, fugerit invida  
 Actas; carpe diem quam minimum credula postero.

- (c) Nequiquam deus abscidit  
 Prudens Oceano dissociabili  
 Terras, si tamen impiae  
 Non tangenda rates transiliunt vada.  
 Audax omnia perpeti  
 Gens humana ruit per vetitum nefas.  
 Audax Iapeti genus  
 Ignem fraude mala gentibus intulit.  
 Post ignem aethera domo  
 Subduetum macies et nova febrium  
 Terris incubuit cohors.

- (d) Lactus in praesens animus quod ultra est  
 Oderit curare, et amara lento  
 Temperet risu; nihil est ab omni  
 Parte beatum.  
 Abstulit clarum cita mors Achillem,  
 Longa Tithonum minuit senectus,  
 Et mihi forsán, tibi quod negarit,  
 Porriget hora.  
 Te greges centum Siculaeque circum  
 Mugiant uaccae, tibi tollit hinnitum  
 Apta quadrigis equa, te bis Afro  
 Murice tinctae.  
 Vestiunt lanae; mihi parua rura et  
 Spiritum Graiae tenuem Camenae  
 Parca non mendax dedit et malignum  
 Spernere uolgens.

Give the scheme of the metre in each of the extracts, and scan the second last stanza.



## 4. Translate and explain:—

- (1) Crescit occulto velut arbor aevo  
Fama Marcelli.
- (2) Dulce pellitis ovibus Galaesi  
Flamen et regnata petam Laconi  
Rura Phalantho.
- (3) Durum: sed levius fit patientia  
Quidquid corrigere est nefas.
- (4) Et minax, quod sic voluere, ponto  
Unda recumbit.
- (5) Quidlibet impotens sperare.
- (6) Ambiguam tellure nova Salamina.
- (7) Regulum et Scauros, animaeque magnae  
Prodigum Paullum superante Poeno  
Gratus insigni referam Camena  
Fabriciumque.
- (8) Damnatuſque longi  
Sisyphus Aeolides laboris.

ADDITIONAL FOR FOURTH YEAR.

## 5. Translate:—

- (a) Non Dindymene, non adytis quatit  
Mentem sacerdotum incola Pythius  
Non Liber aequae, non acuta  
Sic geminant Corybantes aera,  
Tristes ut irae, quas neque Noricus  
Deterret ensis nec mare naufragum  
Nec saevus ignis nec tremendo  
Jupiter ipse ruens tumultu.  
Fertur Prometheus addere principi  
Limo coctus particulam undique  
Desectam et insani leonis  
Vim stomacho apposuisse nostro.
- (b) O diva, gratum quae regis Antium,  
Praesens vel imo tollere de gradu  
Mortale corpus et superbos  
Vertere funeribus triumphos;  
Te semper anteit saeva Necessitas  
Clavos trabales et cuneos manu  
Gestans aëna, nec severus  
Uncus abest liquidumque plumbum.

Te Spes et albo rara Fides colit  
 Velata panno nec comitem abnegat,  
 Utcumque mutata potentes  
 Veste domos inimica linquis.

6. Translate and explain :—

- (a) Scriberis Vario fortis et hostium  
 Victor Maeonii carminis alite.  
 (b) Te, boues olim nisi reddidisses  
 Per dolum amotas, puerum minaci  
 Voce dum terret, uiduus pharetra  
 Risit Apollo.

Explain carefully the construction of *reddidisses* in the second extract.

### THIRD AND FOURTH YEARS.

Lucretius, Book V: CICERO, *Pro Lege Manilia*.

*Examiner*, ..... PRINCIPAL PETERSON, LL.D.

1. Translate :—

- (a) quod superest arvi, tamen id natura sua vi  
 sentibus obducit, ni vis humana resistat  
 vitæ causa valido consueta bidenti  
 ingemere et terram pressis proscindere aratris.  
 si non fecundas vertentes vomere glebas  
 terræque solum subigentes cimus ad ortus,  
 sponte sua nequeant liquidas existere in auras,  
 et tamen interdum magno quaesita labore  
 cum iam per terras frondent atque omnia florent,  
 aut nimiis torret fervoribus ætherius sol  
 aut subiti peremunt imbris gelidæque pruinae,  
 flabraque ventorum violento turbine vexant.
- (b) postremo quid in hac mirabile tantopere est re,  
 si genus humanum, cui vox et lingua vigeret,  
 pro vario sensu varia res voce notaret?  
 cum pecudes mutæ, cum denique sæcla ferarum  
 dissimilis soleant voces variasque ciere,  
 cum metus aut dolor est et cum iam gaudia gliscunt,  
 quippe etenim licet id rebus cognoscere apertis.  
 irritata canum cum primum magna Molossum  
 mollia ricta fremunt duos nudantia dentes,  
 longe alio sonitu rabie restricta minantur,  
 et cum iam latrant et vocibus omnia complent :  
 et catulos blande cum lingua lambere temptant,  
 aut ubi eos iactant pedibus morsuque petentes

suspensis teneros minitantur dentibus haustus,  
 longe alio pacto gannitu vocis adulant,  
 et cum deserti baubantur in aedibus, aut cum  
 plorantis fugiunt summisso corpore plagas.

- (c) denique iam tuere hoc, circum supraque quod omnem  
 continet amplexu terram: si procreat ex se  
 omnia, quod quidam memorant, recipitque perempta,  
 totum natio ac mortali corpore constat.  
 nam quodcumque alias ex se res auget alitque,  
 diminui debet, recreari, cum recipit res.

- (d) nec commune bonum poterant spectare neque ullis  
 moribus inter se scibant nec legibus ui.

- (e) nec pietas ullast velatum saepe videri  
 vertier ad lapidem atque omnis accedere ad aras,  
 nec procumbere humi prostratum et pandere palmas  
 ante deum delubra, nec aras sanguine multo  
 spargere quadrupedum, nec votis nectere vota,  
 sed mage pacata posse omnia mente tueri.

- (f) nequid ob admissum foede dictumue superbe  
 poenarum graue sit soluendi tempus adultum.

Explain the construction.

- (g) frigus enim nudos sine pellibus excruciabat  
*terrigenas*: at nos nil laedit ueste carere  
 purpurea atque auro *signisque* ingentibus *apta*,  
 dum *plebeia* tamen sit, quae defendere possit.

Comment upon the words in italics.

- (h) per loca pastorum deserta atque otia dia.  
 Explain *dia*.

- (i) at nisi purgatumst pectus, quae proelia nobis  
 atque pericula tumst ingratissimum insinuandum!

Parse *ingratissimum*.

2. Explain, *natura daedala rerum, primum quicquid aquai, mortalia saecula, inmissis habenis, intempesta nocte, noctis signa severa, induperator, voluenda aetas, boves Lucas, nexilis vestis, daedala signa polire*.

3. (a) Give a short sketch of the Atomic Theory as presented by Lucretius.

(b) What personal characteristics may be ascribed to Lucretius on the evidence of the *De Rerum Natura*?

## 4 Translate :—

Quid, quod salus sociorum summum in periculum ac discrimen vocatur? Regno est expulsus Ariobarzanes rex, socius populi Romani atque amicus : imminent duo reges toti Asiae non solum vobis inimicissimi, sed etiam vestris sociis atque amicis, civitates autem omnes cuncta Asia atque Graecia vestrum auxilium expectare propter periculi magnitudinem coguntur : imperatorem a vobis certum deposcere, cum praesertim vos alium miseritis, neque audent neque se id facere sine summo periculo posse arbitrantur. Videnti et sentiunt hoc idem quod vos, unum virum esse, in quo summa sint omnia. et eum propter esse, quo etiam carent aegrius : cuius adventu ipso atque nomine tametsi ille ad maritimum bellum venerit, tamen impetus hostium repressos esse intelligunt ac retardatos.

5. (1) Civile, Africanum, Transalpinum, Hispaniense, servile, navale bellum. State very briefly the origin and issue of each of these wars.

(2) Et iis temporibus non pudebat magistratus populi Romani in hunc ipsum locum escendere, cum eum nobis maiores nostri exuviis nauticis et classium spoliis ornatum reliquissent. Translate, and explain the allusion

## 6. Give an idiomatic rendering of the following :

(1) Non enim possunt una in civitate multi rem ac fortunas amittere ut non plures secum in eandem trahant calamitatem.

(2) De huius autem hominis felicitate de quo nunc agimus, hac utar moderatione dicendi, non ut in illius potestate fortunam positam esse dicam, sed ut praeterita meminisse, reliqua sperare videamur, ne aut invisa dis immortalibus oratio nostra aut ingrata esse videatur.

7. What was the date of the speech? Sketch briefly the state of affairs at Rome at the time of its delivery?

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### THIRD AND FOURTH YEARS.

CICERO, *pro Cluentio* : QUINTILIAN, Book X.

*Examiner*,..... PRINCIPAL PETERSON, LL.D.

## I. Translate :—

(a) Tum repente Anconitanum quendam, L. Clodium, pharmacopolam circumforaneum, qui casu tum Larinum *venisset*, adgreditur et cum eo duobus milibus HS, id quod ipsius tabulis tum est demonstratum, transigit. L. Clodius, qui *properaret*, cui fora multa *restarent*, simul atque introductus est, rem confecit : prima potione mulierem sustulit, neque postea Larini punctum est temporis commoratus. Eadem hac Dinaea testamentum faciente, cum tabulas prehendisset Oppianicus, qui gener eius *fuisse*t, digito legata deleverit et quum id multis locis fecisset, post mortem eius, ne lituris coargui posset, testamentum in alias tabulas transcriptum signis adulterinis obsignavit.

Explain the subjunctives :—*properaret*, *fuisse*t.

(b) At enim pecuniam Staieno dedit Oppianicus non ad corrumpendum iudicium, sed ad conciliationem gratiæ. Tene hoc, Acci, dicere, tali prudentia, etiam usu atque exercitatione præditum? Sapientissimum esse dicunt eum, cui quod opus sit ipsi veniat in mentem: proxime accedere illum, qui alterius bene inventis obtemperet. In stultitia contra est Minus enim stultus est is, cui nihil in mentem venit, quam ille, qui, quod stulte alteri venit in mentem, comprobatur. Istam conciliationem gratiæ Staienus tum recenti re, cum faucibus premeretur, excogitavit, sive, ut homines tum loquebantur, a P. Cethego admonitus, istam dedit conciliationis gratiæ fabulam. Nam fuisse hunc tum hominum sermonem recordari potestis: Cethegum, quod hominem odisset et quod eius improbitatem versari in re publica nollet et quod videret eum, qui se ab reo pecuniam, cum iudex esset, clam atque extra ordinem accepisse confessus esset, saluum esse non posse, minus ei fidele consilium dedisse.

## II. Translate, with any necessary explanations:—

(1) Quæ quum ita sint, videamus, quid tandem censores de illo iudicio corrupto iudicasse dicantur. Ac primum illud statuamus: utrum, quia censores subscripserint ita sit: an, quia ita fuerit, illi subscripserint. Si ideo, quia subscripserint: videte, quid agatis, ne in unumquemque nostrum censoribus in posterum potestatem regiam permittatis: ne subscriptio censoria non minus calamitatis civibus, quam illa acerbissima proscriptio possit afferre: ne censorium stilum, cuius mucronem multis remediis maiores nostri retulerunt, æque posthac atque illum dictatorium gladium pertimescamus.

(2) A Cluentius, eques Romanus, causam dicit ea lege, qua lege senatores, et ii, qui magistratum habuerunt, soli tenentur: mihi per eum, recusare, et in arce legis præsidia constituere defensionis meæ, non licet. Si obtinuerit causam Cluentius (sicuti vestra æquitate nixi confidimus), omnes existimabunt, id quod erit, obtinuisse propter innocentiam, quoniam ita defensus sit: in lege autem, quam attingere noluerit, præsidii nihil fuisse.

(3) Nam illud quidem minime probandum est, ad notationes auctoritatemque censoriam exemplum illos e consuetudine militari transtulisse. Statuerunt enim ita maiores nostri, ut, si a multis esset flagitium rei militaris admissum, sortitione in quosdam animadverteretur, ut metus videlicet ad omnes, poena ad paucos perveniret. Quod idem facere censores in delectu dignitatis et in iudicio civium et in animadversione vitiorum qui convenit?

## III. Explain:—

Inter sicarios damnari; praevaricari; ad accusandum descendere: consurgitur in consilium; ex notatione tabellarum invidia; iussit equum traducere; lites aestimare.



IV. Translate with any necessary comment, and explanation of allusions :—

(1) Apollonius in ordinem a grammaticis datum non venit, quia Aristarchus atque Aristophanes neminem sui temporis in numerum redegerunt ; non tamen contemnendum reddidit opus aequali quadam mediocritate.

(2) Nam Macer et Lucretius legendi quidem, sed non ut *ῥησιν* vid est copusf-eloquentiae faciant; elegantes in sua quisque materia, sed alterhnilis alter difficilis.

(3) Audire videor undique congereptes nomina plurimorum poetarum. Quid? Herculis acta non bene Pisandros? Nicandrum frustra secuti Macer atque Vergilius? Quid? Euphorionem transibimus? quem nisi probasset Vergilius idem, numquam certe conditorum Chalcidico versu carminum fecisset in Bucolicis mentionem. Quid? Horatius frustra Tyrtaeum Homero subiungit?

(4) In comoedia maxime claudicamus. Licet Varro Musas, Aeli Stilonis sententia, Plautino dicat sermone locuturas fuisse, si Latine loqui vellent, licet Caecilium veteres laudibus ferant, licet Terenti scripta ad Scipionem Africanum referantur (quae tamen sunt in hoc genere elegantissima et pludhuc habitura gratiae, si intra versus trimetros stetissent) vix levem consequimur umbram.

V. (1) Give the substance of Quintilian's references to Homer, Simonides, Menander, Xenophon, Pindar, Ennius, Lucan, Varro, Julius Secundus, Asinius Pollio.

(2) Trace the origin and growth of Satire.

(3) "Didactic poetry, being in keeping with the sober mind of the Romans was introduced early and steadily maintained." Examine this.

(4) What was the influence of Alexandrian literature upon Roman poetry

(5) Compare the poets of the Republic and the Empire, in respect of their attitude towards contemporary politics.

### THIRD AND FOURTH YEARS.

TACITUS, *Annals*, Book I. ; THE EARLY EMPIRE.

*Examiner*, ..... PRINCIPAL PETERSON, LL.D.

1. Translate :—

(a) "Cur enim primo contionis die ferrum illud, quod pectori meo infigere parabam, detraxistis, o improvidi amici? melius et amantius ille qui gladium offerebat. Cecidissem certe nondum tot flagitiorum exercitui meo conscius; legissetis ducem, qui meam quidem mortem impunitam sineret, Vari tamen et trium legionum ulcisceretur: neque enim di sinant ut Belgarum quamquam offerentium decus istud et claritudo sit, subvenisse Romano nomini, compressisse Germaniae populos. Tua, dive Auguste, caelo recepta mens, tua, pater Druse, imago, tui memoria isdem istis cum

militibus, quos iam pudor et gloria intrat, eluant hanc maculam irasque civiles in exitium hostibus vertant. Vosque, quorum alia nunc ora, alia pectora contueor, si legatos senatui, obsequium imperatori, si mihi coniugem et filium redditis, discedite a contactu ac dividite turbidos id stabile ad paenitentiam, id fidei vinculum erit.'

(b) Plurimus circa aquilas labor, quae neque ferri adversum ingruentia tela neque figi limosa humo poterant. Caecina dum sustentat aciem, suffosso equo delapsus circumveniebatur, ni prima legio sese o'posuisset. Iuvit hostium aviditas, omissa caede praedam sectantium; enisaeque legiones vesperscente die in aperta et solida. Neque is miseriarum finis. Struendum vallum, petendus agger, amissa magna ex parte per quae egeritur humus aut exciditur caespes; non tentoria manipulis, non fomenta sauciis; infectos caeno aut cruore cibos dividentes funestas tenebras et tot hominum milibus unum iam reliquum diem lamentabantur.

(c) Id Tiberii animum altius penetravit: non enim simplices eas curas, nec adversus externos studia militum quaeri. Nihil relictum imperatoribus, ubi femina manipulos intervisat, signa a'adeat, largitionem temptet, tamquam parum ambitiose filium duceis gregali habitu circumferat Caesaremque Caligulam appellarit velit. Potiorem iam apud exercitus Agrippinam quam legatos, quam duces; compressam a muliere seditionem, cui nomen principis obsistere non quiverit. Accendebat haec onerabatque Seianus, peritia morum Tiberii odia in longum iaciens quae reconderet auctaque promeret.

(d) Templum ut in colonia Tarraconensi strueretur Augusto petentibus Hispanis permissum, datumque in omnes provincias exemplum. Centesimam rerum venalium post bella civilia institutam deprecante populo edixit Tiberius militare aerarium eo subsidio niti; simul imparem oneri rem publicam, nisi vicensimo militiae anno veterani dimitterentur. Ita proximae seditionis male consulta, quibus sedecim stipendiorum finem expresserant, abolita in posterum.

## 2. Explain :—

- (a) tributa ac vectigalia.
- (b) theatrales operae.
- (c) nocte concubina.
- (d) tumultuariæ catervæ.
- (e) triumphalia insignia.
- (f) pecuniam erogare.

## 3. Translate and explain, with reference to the context :—

(1) Ne dimissis quidem finem esse militiae, sed apud vexillum tentantes alio vocabulo eosdem labores perfere.

(2) Breves et infaustos populi Romani amores.

(3) Gener invisus, inimici soceri.

(4) Haud pigebit referre in Falanio et Rubrio praetemptata crimina, ut quibus initiis, quanta Tiberii arte gravissimum exitium inreperit, dein repressum sit, postremo arserit cunctaque corripuerit, noscatur.

(5) Quantum aerario aut fisco pendebant, in quinquennium remisit.

(6) Eam condicionem esse imperandi ut non aliter ratio constet quam si uni reddatur.

(7) Neque imperatorem auguratu et vetustissimis caerimoniis praeditum adtrectare feralia debuisse.

(8) Germanos nunquam satis excusaturos, quod inter Albim et Rhenum virgas et secures et togam viderint.

4. (1) Enumerate and explain the significance of the chief titles assumed by Augustus, and indicate the most important changes he introduced into the imperial constitution.

(2) Indicate the limits of the Roman Empire at the accession of Tiberius, giving a list of the different provinces which it included. Sketch the character of the imperial military organization.

(3) What were the evils of the practice of *Delation*, and by what emperors was it encouraged?

(4) Discuss the growth and significance of the practice of *Deification*.

(5) What were the chief advantages to the State of the rule of *Vespasian*?

(6) The character and career of (*a*) *Galba*: (*b*) *Seneca*.

(7) The chief features of the *Latinity* of *Tacitus*.

## GREEK HISTORY.

### THIRD AND FOURTH YEARS.

*Examiner*, ... .. PRINCIPAL PETERSON, LL.D.

1. To what causes was the rise of Athens' naval power due?

2. Define the relations of the Areopagus, the Boule, and the Ecclesia to each other in the time of Pericles. How much of his system was due to Pericles and how much to earlier reformers?

3. Give some account of the buildings erected at Athens between 500 and 430 B. C.

4. Trace the causes of the Peloponnesian war, and describe generally the nature of the issues involved in the struggle. To what causes—immediate or remote—do you attribute the defeat of Athens?

5. Contrast the policy of Pericles, Nicias, and Alcibiades.

6. What were the chief supports of Spartan supremacy after the Peloponnesian war, and to what causes do you attribute the loss of that supremacy and the subsequent decline of Sparta?

7. The origin of the Corinthian war, and the significance of the Peace which concluded it.

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B.A. HONOURS IN CLASSICS.

AESCHYLUS :—*Septem Contra Thebas* ; SOPHOCLES :—*Antigone*.

*Examiner*,.....PRINCIPAL PETERSON, LL.D.

1. Translate :

(a) τὸν ἔβδομον δὴ τόνδ' ἐφ' ἐβδόμαις πύλαις  
λέξω, τὸν αὐτοῦ σοῦ κασίγνητον, πόλει  
οἷας ἀράται καὶ κατεύχεται τύχας·  
πύργοις ἐπεμβὰς καπικηρυχθεὶς χθονί,  
άλώσιμον παιᾶν' ἐπεξιακχάσας,  
σοὶ ξυμφέρεσθαι καὶ κτανὼν θανεῖν πέλας,  
ἣ ζῶντ' ἀτιμαστήρα τῶς δ' ἀνδρηλατῆν  
φυγῇ τὸν αὐτὸν τόνδε τίσασθαι τρόπον.  
τοιαῦτ' ἀϋτεῖ, καὶ θεοὺς γεγεθλίους  
καλεῖ πατρώας γῆς ἐποπτῆρας λιτῶν  
τῶν ὧν γενέσθαι πάγχυ Πολυνείκους βία.

AN (b) ἐγὼ δὲ Καδμείων γε προστάταις λέγω·  
ἦν μὲν τις ἄλλος τόνδε συνθάπτειν θέλη,  
ἐγὼ σφε θάψω κἀνὰ κίνδυνον βαλὼν  
θάψας' ἀδελφὸν τὸν ἐμόν, οὐδ' αἰσχύνομαι  
ἔχουσ' ἄπιστον τήνδ' ἀναρχίαν πόλει.

δεινὸν τὸ σπλάγχνον, οὗ πεφίκαμεν,  
μητρὸς ταλαίνης καπὸ δυστήνου πατρός.  
τοιγὰρ θέλουσ' ἄκοντι κοινῶναι κακῶν,  
ψυχῇ, θανόντι ζῶσα συγγόνῳ φρενί.  
τούτῳ δὲ σάρκας οὐδὲ κοιλογάστορες  
λύκοι σπάσσονται· μὴ δοκησάτω τινί.  
τάφον γὰρ αὐτῷ καὶ κατασκαφάς ἐγὼ,  
γυνή περ οὔσα τῷδε μηχανήσομαι  
κόλπῳ φέρουσα βυσσίνου πεπλώματος,  
καυτὴ καλύψω. μηδὲ τῷ δόξῃ πάλιν.  
θάρσει παρέσται μηχανὴ δραστήριος.

2. Translate, with such notes as are necessary :—

- ΧΟ. ὦμοδακῆς σ' ἄγαν ἕμερος ἐξοτρή-  
νει πικρόκαρπον ἀνδροκτασίαν τελεῖν  
αἵματος οὐ θεμιστοῦ.  
ΕΤ. πατρὸς φίλου γὰρ ἐχθρά μοι τελοῦσ' ἀρὰ  
ξηροῖς ἀκλαύστοις ὄμμασιν προσιζάνει,  
λέγουσα κέρδος πρότερον ὑστέρου μόρου.  
ΧΟ. ἀλλὰ σὺ μὴ 'ποτρύνου· κακὸς οὐ κεκλή-  
σει, βίον εὖ κυρησας· μελαναιγίς δ' οὐκ  
εἴσι δόμων Ἑρινὺς, ὅταν ἐκ χερῶν  
θεοὶ θυσίαν δέχωνται.

3. Explain :—

- (a) τῷ·κάκιστ' αὐδωμένῳ.  
(b) ἐς πατρὸς μόρον ἐξυπτιάζων ὄμμα.  
(c) ἄκροβόλων ἐπάλξεων λιθὰς ἔρχεται, and account  
for the genitive.  
(d) Has this play any political tendency?



## 4. Translate :—

(a) χρόνον τὰδ' ἦν τοσοῦτον, ἔς τ' ἐν αἰθέρι  
 μέσῳ κατέστη λαμπρὸς ἡλίου κύκλος  
 καὶ καὺμ' ἔθαλπε· καὶ τότε' ἐξαίφνης χθονὸς  
 τυφῶς αἰέρας σκηπτόν, οὐράνιον ἄχος,  
 πίμπλησι πεδίου, πᾶσαν αἰκίζων φόβην  
 ὕλης πεδιάδος, ἐν δ' ἐμεστώθη μέγας  
 αἰθήρ· μύσαντες δ' εἵχομεν θείαν νόσοι.  
 καὶ τοῦδ' ἀπαλλαγέντος ἐν χρόνῳ μακρῷ,  
 ἢ παῖς ὁρᾶται, κἀνακωκύνει πικρᾶς  
 ὄρνιθος ὀξὺν φθόγγον, ὥς ὅταν κενῆς  
 εὐνῆς νεοσσῶν ὀρφανὸν βλέψῃ λέχος·  
 οὕτῳ δὲ χαῦτη, ψιλὸν ὥς ὁρᾶ νέκυν.  
 γόοισιν ἐξώμωξεν, ἐκ δ' ἀρὰς κακὰς  
 ἥρᾳτο τοῖσι τοῦργοι ἐξεργασμένοις.

(b) πολλὰ τὰ δεινὰ κούδεν ἀνθρώπου δεινότερον πελεῖ·  
 τοῦτο καὶ πολιοῦ πέραν πόντου χειμερίῳ νότῳ  
 χωρεῖ, περιβρυχίοισιν  
 περῶν ὑπ' οἷδασι,  
 θεῶν τε τὰν ἱπεροτάταν, Γᾶν  
 ἄφθιτον ἀκαμάταν ἀποτρύεται,  
 ἰλλομένων ἀρότρων ἔτος εἰς ἔτος, ἵππεΐῳ γένει πολεῦων.  
 κουφονόων τε φῦλον ὀρνίθων ἀμφιβαλὼν ἄγει  
 καὶ ἀγρίων θηρῶν ἔθνη, πόντου τ' εἰναλίαν φύσιν  
 σπείραισι δικτυοκλώστοις,  
 πέριφραδῆς ἀνῆρ·  
 κρατεῖ δὲ μηχαναῖς ἀγραύλου  
 θηρὸς ὀρεσσιβάτα, λασιαύχενά θ'  
 ἵππον ὀχμάζεται ἀμφὶ λόφον ζυγῶν, οὔρειόν τ' ἀκμ-  
 ῆτα ταῦρον.

(c) ἀρχαία τὰ Λαβδακιδᾶν οἴκων ὀρώμαι  
 πήματ' ἄλλ' ἄλλοις ἐπὶ πήμασι πίπτουντ',  
 οὐδ' ἀπαλλάσσει γενεὰν γένος, ἀλλ' ἐρείπει  
 θεῶν τις, οὐδ' ἔχει λύσιν.  
 νῦν γὰρ ἐσχάτας ὑπὲρ  
 ῥίζας ὃ τέτατο φάος ἐν Οἰδίπου δόμοις—

(d) ἔψαυσας ἀλγεινοτάτας ἐμοὶ μερίμνας,  
 πατρὸς τριπόλιστον οἴκτον  
 τοῦ τε πρόπαντος  
 ἀμετέρου πότμου  
 κλεινοῖς Λαβδονκίδαισιν.

(e) παρὰ δὲ Κυνέων πελαγέων διδυμας ἀλός  
 ἀκταὶ Βοσπόριαι ἰδ' ὁ Θρηκῶν  
 Σαλμυδησός, ἔν' ἀγχίπολις Ἄρης  
 δισσοῖσι Φινείδαις  
 εἶδεν ἀρατὸν ἔλκος  
 τυφλωθὲν ἐξ ἀγρίας δάμαρτος  
 ἀλαδὸν ἀλαστόροισιν ὀμμάτων κύκλοις  
 ἀραχθέντων ὑφ' αἵματηραῖς  
 χεῖρεσσι καὶ κερκίδων ἀκμαῖσιν.

5. Explain the Greek conception of "Ατη. Shew how it is worked out in the *Antigone* and other plays which are connected with it.

(2) Briefly compare Aeschylus and Sophocles in respect of (1) their dramatic art and (2) their ethical teaching.

ARISTOPHANES, *Birds* ; EURIPIDES, *Alcestis*.*Examiner*,..... PRINCIPAL PETERSON, LL.D.

1. Translate :—

(a) ΕΥ. τοῦτ' ἐκεῖνο· ποῖ φύγω δύστηνος ;

ΠΕ. οὗτος οὐ μενεῖς ;

ΕΥ. ἴν' ὑπὸ τούτων διαφορηθῶ ;

ΠΕ. πῶς γὰρ ἂν τούτους δοκεῖς  
ἐκφυγεῖν ; ΕΥ. οὐκ οἶδ' ὅπως ἂν.ΠΕ. ἀλλ' ἐγὼ τοί σοι λέγω  
ὅτι μένοντε δεῖ μάχεσθαι λαμβάνειν τε τῶν χυτρῶν.

ΕΥ. τί δὲ χύτρα νῶ γ' ὠφελήσει ;

ΠΕ. γλαῦξ μὲν οὐ πρόσσεισι νῶν.

ΕΥ. τοῖς δὲ γαμφώνυξι τοισδί ;

ΠΕ. τὸν ὀβελίσκον ἀρπάσας  
εἶτα κατάπηξον πρὸ σαντοῦ

ΕΥ. τοῖσι δ' ὀφθαλμοῖσι τί ;

ΠΕ. ὀξύβαφον ἐντευθενὶ προσθοῦ λαβὼν ἢ τρύβλιον.

ΕΥ. ὦ σοφώτατ', εὖ γ' ἀνεῦρες αὐτὸ καὶ στρατηγικῶς  
ὑπερακοντίξεις σύ γ' ἤδη Νικίαν ταῖς μηχαναῖςΧΟ. ἐλελελεῦ χώρει, κάθες τὸ ῥύγχος· οὐ μελλεῖν ἐχρῆν  
ἔλκε, τίλλε, παῖε, δεῖρε, κόπτε πρῶτην τὴν χύτραν.ΕΠΨ. εἰπέ μοι, τί μέλλετ' ὦ πάντων κάκιστα θηρίων  
ἀπολέσαι παθόντες οὐδὲν ἄνδρε καὶ διασπάσαι  
τῆς ἐμῆς γυναικὸς ὄντε ξυγγενῇ καὶ φυλέτα.(b) ἄγε δὴ φύσιν ἄνδρες ἀμαυρόβιοι, φύλλων γενεᾷ προσό-  
μοιοι,ὀλιγοδράνεις, πλάσματα πηλοῦ, σκιοειδέα φύλα ἀμενηνά  
ἀπτῆνες ἐφημέριοι ταλαοὶ βροτοὶ ἀνέρες εἰκελόνηροι,  
πρόσχετε τὸν τοῦν τοῖς ἀθανότοις ἡμῖν τοῖς αἰὲν ἐοῦσιν  
τοῖς αἰθερίοις τοῖσιν ἀγήρως τοῖς ἄφθιτα μηδομένοισιν,

ἴν' ἀκούσαντες πάντα παρ' ἡμῶν ὀρθῶς περὶ τῶν μετεώ-  
 ρων  
 φύσιν οἰωνῶν γένεσιν τε θεῶν ποταμῶν τ' Ἑρέβους τε  
 Χάους τε  
 εἰδότες ὀρθῶς παρ' ἐμοῦ Προδίκῳ κλάειν εἵπητε τὸ λοι-  
 πόν.  
 χάος ἦν καὶ νύξ ἑρεβός τε μελαν πρῶτον καὶ τάρταρος  
 εὐρύς·  
 γῆ δ' οὐδ' ἀήρ οὐδ' οὐρανὸς ἦν· ἑρέβους δ' ἐν ἀπείροσι  
 κόλποις  
 τίκει πρῶτιστον ὑπηνέμιον νύξ ἢ μελανόπτερος φῶν,  
 ἐξ οὗ περιτελλομέναις ὥραις ἔβλασται ἔρως ὁ ποθεινός,  
 στίλβων νῶτον πτερόγῳιν χρυσαῖν, εἰκῶς ἀνεμώκεσι δι-  
 ναις.

2. Translate and comment on:—

- (a) ΠΕ. ἕτερος αὖ λόφον κατειληφώς τις ὄρνις οὕτοσι.  
 ΕΥ. τί τὸ τέρας τουτί ποτ' ἐστίν ;  
 οὐ σὺ μόνος ἄρ' ἦσθ' ἔποψ, ἀλλὰ χούτος ἕτερος ;  
 ΕΠ. ἄλλ' οὗτος μὲν ἐστι Φιλοκλέους  
 ἐξ ἔποπος, ἐγὼ δὲ τούτου πάππος ὥσπερ εἰ λέγοις  
 Ἰππόνομος Καλλίου καὶ Ἰππονίκου Καλλίας.
- (b) πρῶτον μὲν εὐθὺς πάντες ἐξ εὐνῆς ἅμα  
 ἐπέτονθ' ἔωθεν ὥσπερ ἡμεῖς ἐπὶ νομόν·  
 κᾶπειτ' ἂν ἅμα κατῆραῖν ἐς τὰ βιβλία·  
 εἴτ' ἀπενεμοντ' ἐνταῦθα τὰ ψυφίσματα·
- (γ) εἰ γὰρ ἐντύχοι τις ἥρω  
 τῶν βροτῶν νύκτωρ Ὀρέστη,  
 γυμνὸς ἦν πληγεὶς ὑπ' αὐτοῦ  
 πάντα ταπιδέξια.

## 3. Translate :—

(α) καὶ στᾶσα πρόσθεν ἐστίας κατηύξατο.  
 δέσποιν', ἐγὼ γὰρ ἔρχομαι κατὰ χθόνος,  
 πανύστατόν σε προσπίτνουσ' αἰτήσομαι,  
 τέκν' ὄρφανεῦσαι τὰμά, καὶ τῷ μὲν φίληνδ'  
 σύζευξον ἄλοχον, τῇ δὲ γενναῖον πόσιν  
 μηδ' ὥσπερ αὐτῶν ἡ τεκοῦσ' ἀπόλλυμαι  
 θανεῖν ἀώρους παῖδας, ἀλλ' εὐδαίμονας  
 ἐν γῇ πατρώᾳ τερπνὸν ἐκπλῆσαι βίον.  
 πάντας δὲ βωμοὺς οἱ κατ' Ἀδμήτου δόμους  
 προσῆλθε κᾶξέστεψε καὶ προσηύξατο,  
 πτόρθων ἀποσχίζουσα μυρσίνης φόβην,  
 ἄκλαυστος ἀστένακτος, οὐδὲ τοῦπιόν  
 κακὸν μεθίστη χρωτὸς εὐειδῇ φύσιν.

(β) σὺν δ' ἐποιμαίνοντο χαρᾷ μελέων βαλῖαι τε λύγκες,  
 ἔβα δὲ λιποῦσ' Ὀθρνος νάπαν λεόντων  
 ἃ δαφοινὸς ἔλα·  
 χόρευσε δ' ἀμφὶ σᾶν κιθάρεν,  
 Φοῖβε, ποικιλόθριξ  
 νεβρὸς ὑψικόμων πέραν  
 βαίνουσ' ἐλατᾶν σφυρῷ κούφῳ,  
 χαίρουσ' εὖφροσι μολπᾷ.  
 τοιγὰρ πολυμηλοτάταν  
 ἐστίαν οἰκεῖ παρὰ καλλίναον  
 Βοιβίαν λίμιαν· ἀρότοις δὲ γυνᾶν  
 καὶ πεδίων δαπέδοις  
 ὄρον ἀμφὶ μὲν ἀελίου κνεφαίαν  
 ἱππόστασι αἰθέρα τὰν Μολοσσῶν ... τίθεται,  
 πόντιον δ' Αἰγαίων' ἐπ' ἅκταν  
 ἀλίμενον Πηλίου κρατύνει.



(γ) οὗτοι σ' ἀτίζων οὐδ' ἐν ἐχθροῖσιν τιθεῖς  
 ἔκρυψ' ἐμῆς γυναικὸς ἀθλίους τύχας·  
 ἀχλ' ἄλγος ἄλγει τοῦτ' ἂν ἦν προσκείμενον,  
 εἴ του πρὸς ἄλλου δῶμαθ' ὠρμήθης ξένον·  
 ἄλῃς γὰρ κλαίειν τοῦμὸν ἦν ἐμοὶ κακόν.  
 γυναῖκα δ', εἴ πως ἔστιν, αἰτοῦμαί σ', ἄναξ,  
 ἄλλον τιν' ὅστις μὴ πέπονθεν οἷ' ἐγὼ  
 σώξειν ἄνωχθι Θεσσαλῶν· πολλοὶ δέ σοι  
 ξένοι Φεραίων· μὴ' μ' ἀναμνήσης κακῶν  
 οὐκ ἂν δυναίμην τήνδ' ὁρῶν ἐν δώμασιν  
 ἄδακρυς εἶναι· μὴ νοσοῦντί μοι νόσον  
 προσθῆς· ἄλῃς γὰρ συμφορᾷ βαρύνομαι.

4. Explain points worthy of special notice in the language or subject matter of the following extracts :

- (1) Σπάρτακυκλὰς ἄνικα Καρνείου περινίσσεται ὥρα
- (2) λαβὼν ἴθ' οὐ γὰρ οἶδ' ἂν εἰ πείσαιμί σε.
- (3) οὐκ ἦλθες ἐν δέοντι δέξασθαι δόμους.
- (4) ὦ παῖ, τίν' αὐχεῖς πότερα Λυδὸν ἢ Φρύγα  
 κακοῖς ἐλαύνειν ἀργυρώνητον σέθεν ;

5. What was the state of things in politics at the time of the production of the *Birds*? Give some of the main political allusions.

## GREEK ELEGIAC POETS :—ARISTOTLE, POETICS.

*Examiner*,.....PRINCIPAL PETERSON, LL.D.

## 1. Translate :—

(a) 'Ημεῖς δ', οἳά τε φύλλα φύει πολυανθέος ὥρη  
 ἔαρος, ὅτ' αἰψ' αὐγῇσιν ἀύξεται ἡελίου,  
 τοῖς ἱκελοι, πῆχυιον ἐπὶ χρόνον ἀνθεσιν ἤβης  
 τερπόμεθα, πρὸς θεῶν εἰδότες οὔτε κακόν,  
 οὔτ' ἀγαθόν· Κῆρες δὲ παρεστήκασιν μελαιναί·  
 ἡ μὲν ἔχουσα τέλος γήραος ἀργαλέον,  
 ἡ δ' ἑτέρη θανάτοιο· μῖνονθα δὲ γίγνεται ἡβης  
 καρπὸς, ὅσον τ' ἐπὶ γῇν κίδναται ἥελιος.  
 αὐτὰρ ἐπὶ δὴ τοῦτο τέλος παραμείψεται ὥρης  
 αὐτίκα τεθνᾶναι βέλτιον, ἢ βίοςτος.  
 πολλὰ γὰρ ἐν θυμῷ κακὰ γίγνεται· ἄλλοτε δ' οἶκος  
 τρυχοῦται, πενίης δ' ἔργ' ὀδυνηρὰ πέλει.  
 ἄλλος δ' αὖ παίδων ἐπιδεύεται, ὧν τε μάλιστα  
 ἰμείρων, κατὰ γῆς ἔρχεται εἰς Ἀἶδην.  
 ἄλλος νοῦσον ἔχει θυμοφθόρον· οὐδέ τις ἐστὶν  
 ἀνθρώπων, ᾧ Ζεὺς μὴ κακὰ πολλὰ δίδοι.

Remark on the construction οἳά τε ... φύει : also on the forms αὐγῇσιν, κίδναται, παραμείψεται. What do you know of the author of this elegy ?

(b) σπεύδει δ' ἄλλοθεν ἄλλος· ὁ μὲν κατὰ πόντον ἀλάτῃ  
 ἐν νηυσὶν χρήζων οἴκαδε κέρδος ἄγειν  
 ἰχθυόεντ' ἀνέμοισι φορεύμενος ἀργαλέοισιν,  
 φειδωλὴν ψυχῆς οὐδεμίαν θέμενος·  
 ἄλλος γῆν τέμνων πολυδένδρεον εἰς ἐνιαυτὸν  
 λατρεύει, τοῖσι κάμπυλ' ἄροτρα μελεῖ·  
 ἄλλος Ἀθηναίης τε καὶ Ἡφαίστου πολυτέχνῳ  
 ἔργα δαεὶς χειροῖν ξυλλέγεται βίοντον·

ἄλλος Ὀλυμπιάδων Μουσέων πάρα δῶρα διδαχθεῖς,  
 ἱμερτῆς σοφίης μέτρον ἐπιστάμενος·  
 ἄλλον μάντιν ἔθηκεν ἄναξ ἐκάεργος Ἀπόλλων,  
 ἔγνω δ' ἀνδρὶ κακὸν τηλόθεν ἐρχόμενον,  
 ᾧ συνομαρτήσωσι θεοί· τὰ δὲ μόρσιμα πάντως  
 οὔτε τις οἰωνὸς ῥύσεται οὔθ' ἱερά.  
 ἄλλοι Παιῶνος πολυφαρμάκου ἔργον ἔχοντες  
 ἱητροί· καὶ τοῖς οὐδὲν ἔπεστι τέλος·  
 πολλάκι δ' ἐξ ὀλίγης ὀδύνης μέγα γίγνεται ἄλγος,  
 κοῦκ ἂν τις λύσαιτ' ἥπια φάρμακα δούς·  
 τὸν δὲ κακαῖς νούσοισι κυκώμενον ἀργαλείαις τε  
 ἀψάμενος χειροῖν αἴψα τίθησ' ὑγιῇ.  
 Μοῖρα δέ τοι θνητοῖσι κακὸν φέρει ἡδὲ καὶ ἐσθλόν·  
 δῶρα δ' ἄφυκτα θεῶν γίγνεται ἀθανάτων.

## 2. Translate, adding notes where necessary :—

(α) κατὰ φύσιν δὲ ὄντος ἡμῖν τοῦ μιμεῖσθαι καὶ τῆς ἀρ-  
 μονίας καὶ τοῦ ῥυθμοῦ (τὰ γὰρ μέτρα ὅτι μόρια τῶν ῥυθ-  
 μῶν ἐστί, φανερόν) ἐξ ἀρχῆς τεφυκότες καὶ αὐτὰ μάλιστα  
 κατὰ μικρὸν προάγοντες ἐγέννησαν τὴν ποιήσιν ἐκ τῶν αὐ-  
 τοσχεδιασμάτων. διεσπάσθη δὲ κατὰ τὰ οἰκεία ἥθη ἡ ποίη-  
 σις· οἱ μὲν γὰρ σεμνότεροι τὰς καλὰς ἐμιμοῦντο πράξεις  
 καὶ τὰς τῶν τοιούτων, οἱ δὲ εὐτελέστεροι τὰς τῶν φαύλων,  
 πρῶτον ψόγους ποιοῦντες, ὥσπερ ἕτεροι ὕμνους καὶ ἐγκώ-  
 μια.

(β) ἐτι δ' ἐπεὶ τὸ καλὸν καὶ ζῶον καὶ ἅπαν πρᾶγμα ὃ συν-  
 ἔστηκεν ἐκ τινων, οὐ μόνον ταῦτα τεταγμένα δεῖ ἔχειν, ἀλλὰ  
 καὶ μέγεθος ὑπάρχειν μὴ τὸ τυχόν· τὸ γὰρ καλὸν ἐν μεγέ-  
 θει καὶ τάξει ἐστί, διὸ οὔτε πᾶμικρον ἂν τι γένοιτο καλὸν  
 ζῶον συγχέεται γὰρ ἡ θεωρία ἐγγὺς τοῦ ἀναισθήτου χρόνου  
 γινομένη, οὔτε παμμέγεθες, οὐ γὰρ ἅμα ἡ θεωρία γίνεται,  
 ἀλλ' οἴχεται τοῖς θεωροῦσι τὸ ἐν καὶ τὸ ὅλον ἐκ τῆς θεω-

ρίας, οἶον εἰ μυρίων σταδίων εἴη ζῶον· ὥστε δεῖ καθάπερ ἐπὶ τῶν σωμάτων καὶ ἐπὶ τῶν ζῶων ἔχειν μὲν μέγεθος τοῦτο δὲ εὐσύνοπτον εἶναι, οὕτω καὶ ἐπὶ τῶν μύθων ἔχειν μὲν μῆκος τοῦτο δὲ εὐμνημόνευτον εἶναι.

(γ) δεῖ δὲ τοὺς μύθους συνιστάναι καὶ τῇ λέξει συναπεργάζεσθαι ὅτι μάλιστα πρό ὁμμάτων τιθέμενον· οὕτω γὰρ ἂν ἐναργέστατα ὁ ὁρῶν, ὥσπερ παρ' αὐτοῖς γιγνόμενος τοῖς πραττομένοις, εὐρίσκοι τὸ πρέπον, καὶ ἥκιστα ἂν λανθάνοι τὰ ὑπεναντία. σημεῖον δὲ τούτου ὁ ἐπετιμᾶτο Καρκίνος· ὁ γὰρ Ἀμφιάραος ἐξ ἱεροῦ ἀνῆει· ὁ μὲν ὁρῶντα ἂν τὸν θεάτην ἐλάνθανεν, ἐπὶ δὲ τῆς σκηνῆς ἐξέπεσε, δυσχερανάντων τοῦτο τῶν θεατῶν. ὅσα δὲ δυνατὸν καὶ τοῖς σχήμασι συναπεργαζόμενον. πιθανώτατοι γὰρ ἀπὸ τῆς αὐτῆς φύσεως οἱ ἐν τοῖς πάθεσιν εἰσι, καὶ χειμαίνει ὁ χειμαζόμενος καὶ χαλεπαίνει ὁ ὀργιζόμενος ἀληθινώτατα. διὸ εὐφυοὺς ἡ ποιητικὴ ἐστὶν ἢ μανικοῦ· τούτων γὰρ οἱ μὲν εὐπλαστοὶ οἱ δὲ ἐξεταστικοὶ εἰσιν.

3. (1) Explain the meaning of the following terms: πρόλογος, ἐπεισόδιον, ἔξοδος, πάροδος, στάσιμον, γλῶττα, διάνοια, περιπέτεια, ἀναγνώρισις.

(2) What are the essentials, according to Aristotle, of a good tragedy? Illustrate your answer from existing Greek Tragedians.

(3) What is known of the early history of the Greek Drama? and what improvements are mentioned by Aristotle?

(4) Give a short account of the poetry of (a) Solon, (b) Theognis, (c) Xenophanes.

5. The place of Sicily in Greek Literature.

(6) Distinguish between the dialect of the choruses and that of the dialogue in Greek tragedy. Give the reason for the distinction.

7. Characterize the successive steps in the development of Greek literature, and trace the correspondence between the prevailing forms of literary activity, and the co-existent stages of the national life.

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GREEK PROSE COMPOSITION AND TRANSLATION AT SIGHT.

*Examiner*, ..... PRINCIPAL PETERSON, LL.D.

1. Translate into Greek :—

(a) Three men conspired to murder Timoleon as he was sacrificing in a certain temple. As they were waiting for an opportunity to effect their purpose, a stranger, having observed one of the conspirators, fell upon him and slew him, upon which the other two, thinking their plot had been discovered, threw themselves at Timoleon's feet and confessed the whole matter. This stranger was found on examination to know nothing of the intended murder : but having several years before had a brother killed by the conspirators whom he here put to death, and having till now sought in vain for an opportunity of revenge, he chanced to meet the murderer in the temple, who had planted himself there for the above-mentioned purpose.

(b) I believe then, that our cause (the cause of justice) and its adherents will be better armed against all adversaries that the traitors and the barbarian can be. And therefore my advice is—be not over-alarmed at the war; neither be led on to commence it. I do not see indeed,



that any people of Greece have reason to fear this war. For which of them is ignorant that whilst, looking on the Persian as a common enemy, they were in concord among themselves, they enjoyed many advantages; but since they have regarded him as a friend and quarrelled about private disputes with each other, they have suffered greater calamities than ever before.

## 2. Translate :—

(α) Βούλομαι δὲ καὶ ἐν κεφαλαίοις ἐπανελθεῖν τὴν ἀρετὴν αὐτοῦ, ὡς ἂν ὁ ἔπαινος εὐμνημονεστέρως ἔχῃ. Ἀγῆσίλαος ἱερὰ μὲν καὶ τὰ ἐν τοῖς πολεμίοις ἐσέβετο, ἡγούμενος τοὺς θεοὺς οὐχ ἦττον ἐν τῇ πολεμίᾳ χρῆναι ἢ ἐν τῇ φιλίᾳ συμμάχους ποιεῖσθαι. ἰκέτας δὲ θεῶν οὐδὲ ἐχθροὺς ἐβιάζετο, νομίζων ἄλογον εἶναι τοὺς μὲν ἐξ ἱερῶν κλέπτοντας ἱεροσύλους καλεῖν, τοὺς δὲ βωμῶν ἰκέτας ἀποσπῶντας εὐσεβεῖς ἡγεῖσθαι. ἐκεῖνός γε μὴν ὑμῶν οὐποτ' ἔληγεν ὡς τοὺς θεοὺς οἶοιτο οὐδὲν ἦττον ὁσίοις ἔργοις ἢ ἀγνοῖς ἡδεσθαι. ἀλλὰ μὴν καὶ ὅποτε εὐτυχοίῃ, οὐκ ἀνθρώπων ὑπερφρόνει, ἀλλὰ θεοῖς χάριν ἔδει. καὶ θαρρῶν πλείονα ἔθυεν ἢ ὀκνῶν ἡὔχετο. εἴθιστο δὲ φοβούμενος μὲν ἰλαρὸς φαίνεσθαι, εὐτυχῶν δὲ πρᾶος εἶναι. τῶν γὰρ μὴν φίλων οὐ τοὺς δυνατωτάτους ἀλλὰ τοὺς προθυμοτάτους μάλιστα ἡσπάζετο. ἐμίσει δὲ οὐκ εἴ τις κακῶς πάσχων ἡμύνετο, ἀλλ' εἴ τις εὐεργετούμενος ἀχάριστος φαίνοιτο. ἔχαιρε δὲ τοὺς μὲν αἰσχροκερδεῖς πένητας ὀρών, τοὺς δὲ δικαίους πλουσίους ποιῶν, βουλόμενος τὴν δικαιοσύνην τῆς ἀδικίας κερδαλεωτέραν καθιστάναι. ἥσκει δὲ ἐξομιλεῖν μὲν παντοδαποῖς χρῆσθαι δὲ τοῖς ἀγαθοῖς. ὅποτε δὲ ψεγόντων ἢ ἐπαινούντων τινὰς ἀκούοι, οὐχ ἦττον ᾤετο καταμανθάνειν τοὺς τῶν λεγόντων τρόπους ἢ περὶ ὧν λέγοιεν. καὶ τοὺς μὲν ὑπὸ φίλων ἐξαπατωμένους οὐκ ἔψεγε, τοὺς δὲ ὑπὸ πολεμίων πάμπαν κατεμέμφετο, καὶ τὸ μὲν ἀπιστοῦντας ἐξαπατᾶν σοφὸν ἔκρινε, τὸ δὲ πιστεύοντας ἀνόσιον.

(b) τῶν μὲν τοίνυν ῥητόρων Ἰσοκράτης οὐχ ὅπως εἰς πόλεμον ἐξῆλθέ ποτε, ἀλλ' οὐδ' ἐπὶ δικαστήριον ἀνέβη, διὰ δειλίαν, οἶμαι, ὅτι οὐδὲ τὴν φωνὴν διαρκοῦσαν εἶχε. τί ἔτι; οὐχὶ Δημάδης μὲν καὶ Λισχίνης καὶ Φιλοκράτης ὑπὸ δέους εὐθύς τῇ καταγγελίᾳ τοῦ Φιλίππου πολέμου τὴν πόλιν προὔδοσαν καὶ σφᾶς αὐτοὺς τῷ Φιλίππῳ καὶ διετελεσαν αἰεὶ τὰ ἐκείνου πολιτευόμενοι; ὁ Ὑπερίδης δὲ καὶ Δημοσθένης καὶ Λυκούργος, οἳ γε δοκοῦντες ἀνδριότεροι κἀν ταῖς ἐκκλησίαις αἰεὶ θορυβοῦντες καὶ λοιδορούμενοι τῷ Φιλίππῳ, τί ποτε ἀπειργάσαντο γενναῖον ἐν τῷ πρὸς αὐτὸν πολέμῳ; καὶ Ὑπερίδης μὲν καὶ Λυκούργος οὐδὲ ἐξῆλθον, ἀλλ' οὐδὲ ὅλως ἐτόλμησαν μικρὸν ἔξω παρακῦψαι τῶν πυλῶν, ἀλλ' ἐντειχίδιοι ἐκάθητο παρ' αὐτοῖς ἤδη πολιορκούμενοι γνωμῖδια καὶ προβουλευμάτια συντιθέντες. ὁ δὲ κορυφαιότατος αὐτῶν, ὁ ταυτὶ λέγων ἐν ταῖς ἐκκλησίαις συνεχῶς, “Φιλίππος γὰρ ὁ Μακεδὼν ὕλεθρος, ὅθεν οὐδὲ ἀνδράποδον πρίαίτο τίς ποτε,” τολμήσας προελθεῖν ἐς τὴν Βοιωτίαν πρὶν ἢ συμμῖξαι τὰ στρατόπεδα καὶ συμβαλεῖν ἐς χεῖρας, ρίψας τὴν ἀσπίδα ἔφυγεν. ἢ οὐδέπω ταῦτα πρότερον διήκουσας οὐδενὸς πάνυ γνώριμα ὄντα οὐχ ὅπως Ἀθηναίοις, ἀλλὰ Θραξὶ καὶ Σκύθαις, ὅθεν ἐκείνο τὸ κάθαρμα ἦν;

- (c) γενναιότητος τῶν τρόπων τεκμήριον  
 τὸ σχῆμ' ἔχεις τόδ' ἢ τις εἰ ποτ', ὦ γύναι.  
 γνωίῃ δ' ἂν ὥς τὰ πολλὰ γ' ἀνθρώπου πέρι  
 τὸ σχῆμ' ἰδὼν τις, εἰ πέφυκεν εὐγενής.  
 ἔα.  
 ἀλλ' ἐξέπληξάς μ', ὄμμα συγκλήσασα σόν,  
 δακρύοις φ' ὑγράνας' εὐγενῇ παρηΐδα,  
 ὥς εἶδες ἀγνὰ Λοξίου χρηστήρια.  
 τί ποτε μερίμνης εἰς τόδ' ἦλθες, ὦ γύναι;  
 οὐ πάντες ἄλλοι γάλα λεύσσοντες θεοῦ  
 χαίρουσιν, ἐνταῦθ' ὄμμα σὸν δακρύρροεῖ.

TERENCE, *Phormio*; PLAUTUS, *Captivi*.*Examiner*, . . . . . PRINCIPAL PETERSON, LL.D.

1. What are the characteristics of Terence's style? How far does his syntax differ from writers of the Augustan age?

2. Give instances of archaic forms that occur in Terence.

3. Translate and explain—

Postquam poeta vetus poetam non potest  
retrahere ab studio et transdere hominem in otium,  
maledictis deterrere ne scribat parat.

4. Translate—

(1) PH. Cedo dum, enunquam iniuriarum audisti mihi scriptam dicam?

GE. Qui istuc? PH. Quia non rete accipitri tenditur neque miluo,  
qui male faciunt nobis: illis qui nil faciunt tenditur,  
quia enim in illis fructus est, in illis opera luditur.  
Aliis aliunde est periculum, unde aliquid abradi potest:  
mihi sciunt nil esse. Dices "ducent damnatum domum;"  
alere nolunt hominem edacem, et sapiunt mea sententia.

GE. Non pote satis pro merito ab illo tibi referri gratia.

PH. Immó enim nemo satis pro merito gratiam regi refert,  
Ten asymbolum venire unctum atque lautum e balneis,  
otiosum ab animo, quom ille et cura et sumptu absumitur!  
dum tibi fit quod placeat, ille ringitur; tu rideas,  
prior bibas, prior decumbas; cena dubia apponitur.

GE. Quid istuc verbi est? PH. Ubi tu dubites quid sumas potissimum.

(2) DE. Nos ad te ibamus, Phormio.

PH. Quid ad me ibatis? ridiculum: verebimini  
ne non id facerem quod recepissem semel?  
heus, quanta quanta haec mea paupertas est, tamen  
adhuc curavi unum hoc quidem, ut mi esset fides.  
Idque adeo me venio nuntiatum, Demipho,  
paratum me esse; ubi voltis, uxorem date.

5. Explain the following expressions and proverbs: *Laterem lavem; actum ne agas; auribus lupum teneo; ne praeter casam; versuram solves; Amo te; amabo te; numquid me vis? emissae est manu; phaleratis dictis; iniecti scrupulum; in nervom ibit; scisti uti foro; operam tibi dico.*

## 6. Translate :

HE. Set qua faciest tuus sodalis Philocrates ? AR. Dicam tibi :  
 Macilento ore, naso acuto, corpore albo, oculis nigris,  
 Subrufust, aliquantum crispus, cincinnatus. HE. Convenit.  
 TY. Ut quidem hercle in medium ego hodie pessume processerim :  
 Vae illis uirgis miseris, quae hodie in tergo morientur meo. 640  
 HE. Verba mihi data esse uideo. TY. Quid cessatis, compedes,  
 Currere ad me meaque amplecti crura, ut uos custodiam ?  
 HE. Satin illi me hodie scelesti capti ceperunt dolo ?  
 Illic seruom se adsimulabat, hic sese autem liberum,  
 Nuculeum amisi, retinui pigneri putamina.  
 Ita mi stolido sursum uorsum os subleuere offuciis.

## 7. Translate :—

(1) HE. Habe modo bonum animum : nam illum confido domum  
 In his diebus me reconciliassere.  
 Nam eccum captiuom hunc adolescentem [emi] Aleum  
 Prognatum genere summo et summis ditiis :  
 Hoc illum me mutare confido fore.  
 ER. Ita di deaque faxint. HE. Set numquo foras  
 Vocatus [es] ad cenam ? ER. Nusquam, quod sciam.  
 Set quid tu id quaeris ? HE. Quia mist natalis dies :  
 Propterea te uocari [ad me] ad cenam uolo.  
 ER. Facete dictum. HE. Set si pauxillum potes  
 Contentus esse. ER. Ne perpauxillum modo :  
 Nam istoc me adsiduo uictu delecto domi.  
 HE. Age sis roga. ER. Emptum, nisi qui meliorem adferet  
 Quae mi atque amicis placeat conditio magis :  
 Quasi fundum uendam, meis me addicam legibus.  
 HE. Profundum uendis tu quidem, hard fundum mihi.  
 Set si uenturu's, temperi. ER. Hem, uel iam otiumst.  
 HE. I modo, uenare leporem : nunc ictim tenes.  
 Nam meus scruposam uictus conmetat uiam.

Explain any unusual constructions and forms which occur in the above extract.

(2) ER. Move abs te moram [omnem] atque, Ergasile, age hanc rem !  
 Minor interminorque, ne quis mihi obstiterit obuiam,  
 nisi qui sat diu vixisse sese homo arbitrabitur :  
 nam qui obstiterit, ore sistet. HE. Hic homo pugilatum incipit.  
 ER. Facere certum est. Proinde ut omnes itinera insistant sua,  
 ne quis in hac platea negoti conferat quidquam sui :



nam meus est balista pugnus, cubitus catapulta est mihi,  
humerus aries; tum genu ut quemque iecero, ad terram dabo;  
dentilegos omnis mortalis faciam, quemque offendero!

8. Give the meaning of the following phrases:

(a) calceatis dentibus, (b) salutem dicito, (c) qui sputatur morbus,  
(d) sine sacris hereditatem.

9. (1) Point out clearly the differences between the tragic iambic trimeter of the Greek tragedians and the iambic trimeter of Terence. What other form of the iambic trimeter is found?

(2) Compare the phraseology of Plautus with that of Terence.

(3) What is the meaning of the word *contaminatio*? Illustrate your answer from your knowledge of extant plays.

(4) How did a Roman theatre differ from a Greek one in construction? By whom, and when, was the first permanent stone theatre built at Rome? What were the *cunei*, the *cavea*, the *proscenium* and the *scaena*, respectively?

(5) Describe the rooms and furniture of a Roman house.

(6) The debt of Roman comedy to Greek literature.

TACITUS, *Dialogus de Oratoribus*: VIRGIL, *Eclogues*.

Examiner,.....PRINCIPAL PETERSON, LL.D.

I. Translate:—

(a) Vixdum finierat Maternus, concitatus et velut instinctus, cum Vipstanus Messalla cubiculum eius ingressus est, suspicatusque ex ipsa intentione singulorum altiore inter eos esse sermonem, Num parum tempestivus, inquit, interveni secretum consilium aut causae alicuius meditationem tractantibus?

Minime, minime, inquit. Secundus, atque adeo vellem maturius intervenisses; delectasset enim te et Apri nostri accuratissimus sermo, cum Maternum ut omne ingenium ac studium suum ad causas agendas converteret exhortatus est, et Materni pro carminibus suis laeta, utque poetas defendi decebat, audentior et poetarum quam oratorum similior oratio.

Me vero, inquit, et sermo iste infinita voluptate affecisset atque id ipsum delectat quod vos, viri optimi et temporum nostrorum oratores, non forensibus tantum negotiis et declamatorio studio ingenia vestra exercetis sed eiusmodi etiam disputationes assumitis quae et ingenium alunt et eruditionis ac litterarum iucundissimum oblectamentum cum vobis qui ista disputatis afferunt, tum etiam iis ad quorum aures pervenerint.



(b) Num dubitamus inventos qui pro Catone Appium Caecum mirarentur? satis constat ne Ciceroni quidem obtrectatores defuisse, quibus inflatus et tumens nec satis pressus, sed supra modum exsultans et superfluens et parum antiquus videretur. Legistis utique et Calvi et Bruti ad Ciceronem missas epistulas, ex quibus facile est deprehendere Calvum quidem Ciceroni visum exsanguem et aridum, Brutum autem otiosum atque diiunctum; rursusque Ciceronem a Calvo quidem male audisse tamquam solutum et enervem, a Bruto autem, ut ipsius verbis utar, tamquam fractum atque elumbem. Si me interrogas, omnes mihi videntur verum dixisse.

(c) In his artibus exercitationibusque versatus orator, sive apud infestos sive apud cupidos sive apud invidentes sive apud tristes sive apud timentes dicendum habuerit, tenebit venas animorum, et prout cuiusque natura postulabit, adhibebit manum et temperabit orationem, parato omni instrumento et ad omnem usum reposito. Sunt apud quos adstrictum et collectum et singula statim argumenta concludens dicendi genus plus fidei meretur: apud hos dedisse operam dialecticae proficiet. Alios fusa et aequabilis et ex communibus ducta sensibus oratio magis delectat: ad hos permovendos mutuabimur a Peripateticis aptos et in omnem disputationem paratos iam locos.

## II. Translate and explain:—

(1) Quando enim rarissimarum recitationum fama in totam urbem penetrat, nedum ut per tot provincias innotescat?

(2) Nec comitatus istos et egressus aut frequentiam salutantium concupisco, non magis quam aera et imagines quae etiam me nolente in domum meam irruerunt.

(3) Nam lucrosae huius et sanguinantis eloquentiae usus recens et malis moribus natus, atque, ut tu dicebas, Aper, in locum teli repertus.

(4) Asinius quoque quamquam propioribus temporibus natus sit videtur mihi inter Menenius et Appios studuisse.

(5) Oratio autem, sicut corpus hominis, ea demum pulchra est, in qua non eminent venae nec ossa numerantur, sed temperatus ac bonus sanguis implet membra et exsurgit toris ipsosque nervos rubor tegit et decor commendat.

(6) Primus haec tertio consulatu Cn. Pompeius adstrinxit, imposuitque veluti frenos eloquentiae, ita tamen ut omnia in foro, omnia legibus, omnia a praetores gererentur.

III. Discuss briefly the question of the authorship of the Dialogue. At what time is it supposed to be held?

## IV. Translate:—

(a) Tum vero in numerum Faunosque ferasque videres  
Ludere, tum rigidas motare cacumina quercus:

Nec tantum Phoebus gaudet Parnasia rupes,  
 Nec tantum Rhodope miratur et Ismarus Orphea.  
 Namque canebat, uti magnum per inane coactu  
 Semina terrarumque animaeque marisque fuissent  
 Et liquidi simul ignis; ut his exordia primis  
 Omnia et ipse tener mundi concreverit orbis;  
 Tum durare solum et discludere Nerea ponto  
 Coeperit et rerum paulatim sumere formas;  
 Iamque novum terrae stupeant lucescere solem,  
 Altius atque cadant submotis nubibus imbres;  
 Incipiant silvae cum primum surgere, cumque  
 Rara per ignaros errent animalia montes.  
 Hinc lapides Pyrrhae iactos, Saturnia regna,  
 Caucasiasque refert volucres furtumque Promethei.  
 His adiungit, Hylan nautae quo fonte relictum  
 Clamassent, ut litus, Hyla, Hyla, omne sonaret.

From what sources did Virgil derive this account of the creation? Who is the speaker?

- (b) *L.* Quid, quae te pura solum sub nocte canentem  
 Audieram? numeros memini, si verba tenerem.  
*M.* "Daphni, quid antiquos signorum suspicis ortus?  
 "Ecce Dionaei processit Caesaris astrum,  
 "Astrum, quo segetes gauderent frugibus, et quo  
 "Duceret apricis in collibus uva colorem.  
 "Inserere, Daphni, puros: carpent tua poma nepotes."  
 Omnia fert aetas, animum quoque: saepe ego longos  
 Cantando puerum memini me condere soles:  
 Nunc oblita mihi tot carmina; vox quoque Moerim  
 Iam fugit ipsa; lupi Moerim videre priores.  
 Sed tamen ista satis referet tibi saepe Menalcas.  
*L.* Caussando nostros in longum ducis amores.  
 Et nunc omne tibi stratum silet aequor, et omnes,  
 Aspice, ventosi ceciderunt murmuris aerae;  
 Hinc adeo media est nobis via; namque sepulchrum  
 Incipit adparere Bianoris: hic, ubi densas  
 Agricolae stringunt frondes, hic, Moeri, canamus;  
 Hic haedos depone, tamen veniemus in urbem.  
 Aut si, nox pluviam ne colligat ante, veremur,  
 Cantantes licet usque—minus via laedit—eamus;  
 Cantantes ut eamus, ego hoc te fasce levabo.  
*M.* Desine plura, puer, et, quod nunc instat, agamus;  
 Carmina tum melius, cum venerit ipse, canemus.

## V. Translate and comment upon :—

- (1) O Meliboeë, deus nobis hæc otia fecit.  
Namque erit ille mihi semper deus.
- (2) Non ulli pastos illis egere diebus  
frigida, Daphni, boves ad flumina; nulla neque amnem  
libavit quadrupes, nec graminis attigit herbam.  
Daphni, tuum Poenos etiam ingemuisse leones  
interitum montesque feri silvaeque loquuntur.
- (3) Pastores, hedera nascentem ornate poetam,  
Arcades, invidia rumpantur ut ilia Codro;  
Aut, si ultra placitum laudarit, bacchare frontem  
Cingite, ne vati noceat mala lingua futuro.
- (4) Si proprium hoc fuerit, levi de marmore tota  
Puniceo stabis suras evincta cothurno.
- (5) O tantum libeat mecum tibi sordida rura  
atque humiles habitare casas, et figere cervos,  
haedorumque gregem viridi compellere hibisco!
- (6) Quid domini faciant, audent cum talia fures?
- (7) An mihi cantando victus non redderet ille,  
quem mea carminibus meruisset fistula caprum?
- (8) Extremum hunc, Arethusa, mihi concede laborem.

VI. Write a short note on (1) the scenery of the *Eclogues*, and (2) the type of poetry to which they belong.

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LATIN PROSE COMPOSITION AND TRANSLATION AT SIGHT.

Examiner,.....PRINCIPAL PETERSON, LL.D.

## 1. Translate into Latin Prose :—

Cato, now fearing he should be overborne, was of opinion that it was better to give Pompey some office whose authority was limited by law, than to entrust him with absolute power. Bibulus, though Pompey's declared enemy, moved in full senate that he should be appointed sole consul. For by that means, said he, the commonwealth will either recover from her disorder, or, if she must serve, will serve a man of the greatest merit. The whole house was surprised at the motion; and when Cato rose, it was expected he would oppose it. A profound silence ensued, and he said: He should not have been the first to propose such an expedient; but, as it was proposed by another, he deemed it advisable to embrace it; for he thought any kind of government better than none at all, and knew no man fitter to rule than Pompey in a time of such trouble. The senate came into his opinion, and a vote was passed that Pompey should be

appointed sole consul, and that, if he should have need of a colleague, he might choose one himself, provided it were not before the expiration of two months.

2. Translate:—

(1) *Apud magnam partem senatus et magnitudine rerum gestarum valebat et gratia. maiores natu negabant triumphum, et quod alieno exercitu rem gessisset et quod provinciam reliquisset cupiditate rapiendi per occasionem triumphi: id vero eum nullo exemplo fecisse. consulares praecipue expectandum fuisse consulem censebant: potuisse enim castris prope urbem positam tutanda colonia ita, ut acie non decerneret, in adventum eius rem-extrahere; quod praetor non fecisset, senatui faciendum esse, ut consulem expectaret; ubi coram disceptantes consulem et praetorem audissent verius de causa existimatos esse. magna pars senatus nihil praeter res gestas et an in magistratu suisque auspiciis gessisset, censebant spectare senatum debere: ex duabus coloniis, quae velut claustra ad cohibendos Gallicos tumultus oppositae fuissent, cum una direpta et incensa esset traiectionemque id incendium velut ex continentibus tectis in alteram tam propinquam coloniam esset, quid tandem praetori faciendum fuisse?*

(2)

*Sic, cum compage soluta*

*Saecula tot mundi suprema coegerit hora,  
Antiquum repetent iterum chaos omnia; mixtis  
Sidera sideribus concurrent: ignea pontum  
Astra petent: tellus extendere litora nolet,  
Excutietque fretum: fratri contraria Phoebe  
Ibit, et, obliquum bigas agitare per orbem  
Indignata, diem poscet sibi: totaque discors  
Machina divulsi turbabit foedera mundi  
In se magna ruunt: laetis hunc numina rebus  
Crescendi posuere modum; nec gentibus ullis  
Commodat in populum, terrae pelagique potentem,  
Invidiam Fortuna suam. Tu causa malorum,  
Facta tribus dominis communis, Roma, nec umquam  
In turbam missi feralia foedera regni.  
O male concordem nimiamque cupidinem caeci,  
Quid miscere iuvat vires, orbemque tenere  
In medium? Dum terra fretum, terramque levabit  
Aer, et longi volvent Titana labores  
Noxque diem caelo totidem per signa sequetur,  
Nulla fides regni socus, omnisque potestas  
Impatiens consortis erit.*

(3)

*“Occurris quocunque loco mihi, Postume, clamas  
Protinus, et prima est haec tua vox, ‘Quid agis’?  
Hoc si me decies una conveneris hora  
Dicis; habes puto tu, Postume, nil quod agas.”*

# MATHEMATICS AND NATURAL PHILOSOPHY

SESSIONAL EXAMINATIONS, 1896.

FIRST YEAR.

GEOMETRY—ARITHMETIC.

MONDAY, APRIL 13TH :—MORNING, 9 TO 12.

*Examiner*,.....ALEX. JOHNSON, M.A., LL.D.

*Assistant Examiner*,.....H. M. TORY, B.A.

1. Prove that only one perpendicular can be let fall on a given right line from a given point outside it.

2. If a right line be divided into any two parts, the sum of the squares of the whole line and one part is equal to twice the rectangle under the whole line and that part together with the square of the other part.

(a) Taking consecutively the square of the sum, the sum of the squares, and the square of the difference, of two given lines, prove that they have a common difference.

3. If two equal angles be constructed having their vertices at the centre of a circle, the arcs of the circle which they subtend are equal.

(a) Two parallel chords of a circle intercept equal arcs.

4. Find a third proportional to two given lines.

5. Reduce  $\frac{353}{990}$  to a decimal, and verify the result by converting it back into a vulgar fraction.

6. Add together  $2\frac{2}{3} + 8\frac{7}{9} - 5\frac{1}{3}$ , and divide the result by the half of  $\frac{1}{2}$ .

7. In a circle the angle in a semi-circle is a right angle, the angle in a segment greater than a semi-circle is less than a right angle; and the angle in a segment less than a semi-circle is less than a right angle.

(a) Right-angled triangles are described on the same hypotenuse: show that the angular points opposite the hypotenuse all lie on a circle described on the hypotenuse as diameter.

8. Inscribe an equilateral and equiangular hexagon in a given circle.



9. Equal parallelograms, which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

10. Similar triangles are to one another in the duplicate ratio of their homologous sides.

11. Find to three decimal places the square root of  $3 + \frac{1}{7 + \frac{1}{15}}$

12. If a person can travel 810 miles in 30 days, travelling 6 hours each day, how many hours per day must he travel to go 300 miles in  $7\frac{1}{2}$  days?

# FIRST YEAR.

## TRIGONOMETRY—ALGEBRA.

TUESDAY, APRIL 14TH:—9 TO 12 A.M.

*Examiner* ..... ALEX. JOHNSON, M.A., LL.D.

*Assistant Examiner*, ..... H. M. TORR, B.A.

1. Express the angle  $175^\circ$  in radians.

2. If the diameter of the Earth be 8,000 miles, and the distance between the centres of the Earth and the Moon be 240,000 miles, find in degrees, minutes and seconds the angle which the diameter subtends at the centre of the Moon.

3. Construct the angle whose tangent is  $\frac{3}{5}$ , and the angle whose sine is  $\frac{3}{5}$ . Calculate the cosines of each.

4. Divide the number 90 into two such parts that if half the greater part be added to the double of the smaller, the result is 90.

5. Find the *H. C. F.* or *G. C. M.* of

$$2x^3 + x^2 - 8x + 5 \text{ and } 7x^3 - 12x + 5.$$

6. Reduce to its simplest form

$$\frac{1}{x-1} - \frac{1}{2(x+1)} - \frac{x+3}{2(x^2+1)}.$$

7. Trace the changes of sign in the tangent of an angle as the angle increases from  $0^\circ$  to  $360^\circ$ .

8. Express the other trigonometrical ratios in terms of the sine.

9. Prove the following relations :

$$(1) \quad \frac{\tan^2 A}{1 + \tan^2 A} = \sin^2 A$$

$$(2) \quad \tan^2 A - \tan^2 B = \frac{\cos^2 B - \cos^2 A}{\cos^2 B \cos^2 A}$$

$$(3) \quad \sin P + \sin Q = 2 \sin \frac{P+Q}{2} \cos \frac{P-Q}{2}$$

10. Prove in any triangle that

$$(1) \quad \cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

$$(2) \quad \sin \frac{A}{2} = \sqrt{\frac{(s-b)(s-c)}{bc}} \quad \text{when } s = \frac{a+b+c}{2}$$

$$(3) \quad \frac{a+b}{c} = \frac{\cos \frac{(A-B)}{2}}{\cos \frac{(A+B)}{2}}$$

11. Solve the following equations :

$$(1) \quad \frac{4x}{x+1} - \frac{x}{x-2} = 3$$

$$(2) \quad \frac{x}{a} + \frac{y}{b} = 1, \quad \frac{x}{b} + \frac{y}{a} = 1$$

$$(3) \quad x + \frac{1}{x} = \frac{5}{2}$$

$$(4) \quad 2x - y = 5, \quad x + 3y = 2xy.$$

12. Simplify

$$(1) \quad \frac{x^2 - x + \frac{x-1}{x+1}}{x + \frac{1}{x+1}}$$

$$(2) \quad \sqrt[3]{512} - \sqrt[3]{50} - \sqrt[3]{98}$$

$$(3) \quad \sqrt[3]{10} \times \sqrt[3]{20} \times \sqrt[3]{40}$$

INTERMEDIATE EXAMINATION, 1896.

GEOMETRY AND ARITHMETIC.

MONDAY, APRIL 13TH :—MORNING, 9 TO 12.

|                                 |   |                                |
|---------------------------------|---|--------------------------------|
| <i>Examiners</i> , .....        | { | ALEXANDER JOHNSON, M.A., LL.D. |
|                                 |   | JOHN COX, M.A.                 |
|                                 |   | H. WALTERS, B.A.               |
| <i>Assistant Examiner</i> ..... |   | H. M. TORY, B.A.               |

1. Construct an isosceles triangle having each of the base angles double the vertical angle.

(a) If the length of the side be  $R$ , find the length of the base.

2. Given any two lines, find two lines whose ratio shall be the duplicate ratio of the given lines.

3. Construct the triangle in question 1 so that its area shall be equal to that of a given regular hexagon.

4. Reduce .2333' to a vulgar fraction and verify the result.

5. Find the triangle of maximum area which can be inscribed in a given circle, having a given chord for one side. Hence, prove that the triangle of maximum area inscribed in a circle is equilateral, and find the area of the greatest triangle inscribed in a circle of 10 inches radius.

6. If the ratios of two sides of one triangle to two sides of another triangle be equal, and also the angles contained by those sides be equal, the triangles are equiangular to one another.

7. If a straight line be drawn from each corner of a square (side = 15 inches) to the nearer point of tri-section to the next side in order, so as to form a square, this square will have an area of 90 square inches.

8. The outside measurements of an iron safe are: length, 6 ft. 3 in.; breadth, 2 ft. 9 in.; depth 3 ft.; and the walls are 3 inches thick. Find its weight, if iron is 7.207 times as heavy as water, and a cubic foot of water weighs 1000 oz.

9. In equal circles, angles, whether at the centre or at the circumference, have the same ratio which the arcs on which they stand have to one another.

10. If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the segments of the base shall have the same ratio which the sides of the triangle have to one another.

11. Divide a circle into two segments, so that the angle contained in one segment shall be equal to twice the angle contained in the other.

12. (a) Extract the square root of 5.5 to three places of decimals.

(b) Assuming that the area of a circle is half the product of the lengths of the circumference and the radius, find in feet the diameter of a circular field containing one acre.

## INTERMEDIATE EXAMINATIONS, 1896.

### TRIGONOMETRY AND ALGEBRA.

TUESDAY, APRIL 14TH:—MORNING, 9 TO 12.

*Examiners*, ..... { ALEXANDER JOHNSON, M.A., LL.D.  
JOHN COX, M.A.  
*Assistant Examiner*, ..... H. M. TORY, B.A.

1. To find the distance between two points on the opposite side of the river, a distance of 506 yards is measured as a base-line, and the angles which each point makes with the base-line are observed to be  $118^{\circ} 20'$ , and  $46^{\circ} 14'$  at one extremity, and  $88^{\circ} 48'$  and  $33^{\circ} 12'$  at the other : what is their distance ?

2. Find by logarithms a fourth proportional to 8.36547, 71.3678, and .0336756.

3. Prove  $\tan (A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$

(a) Calculate  $\tan B$  if  $\tan (A + B) = 2$  and  $A = 45^{\circ}$ .

4. Solve the following equations :

$$\frac{x+6}{4} - \frac{16-3x}{12} = \frac{25}{6} :$$

$$\frac{x}{g} + \frac{y}{q} = \frac{N}{n} ; x + y = N ;$$

$$\sqrt{a^2 + x^2} + \sqrt{a^2 - x^2} = b.$$

5. Find the time after 3 o'clock when the hour and minute hands of a watch are opposite one another.

6. Find the G. C. M. or H. C. F. of  $a^4 - x^4$  and  $a^3 - a^2 x - ax^2 + x^3$ .

7. If  $x = \frac{b^2 + c^2 - a^2}{26c}$  and  $y = \frac{(a-b+c)(a+b-c)}{(a+b+c)(-a+b+c)}$

prove that  $(x+1)(y+1) = 2$ ; and simplify

$$(1) \frac{a-b}{1+ab} + \frac{b-c}{1+bc} \\ \left\{ 1 - \frac{(a-b)(b-c)}{(1+ab)(1+bc)} \right\}$$

$$(2) \sqrt[p+q]{\left(\frac{a^p}{a^q}\right)^{pq} \div \left\{ \frac{(a^p - q)^p}{(a^{p+q})^q} \right\}^q}$$

8. The number of telegraph posts per mile on a certain road is such that if there were 3 less in each mile the interval between the posts would be increased by  $9\frac{3}{4}$  yards. Find the interval between the posts.

9. A man borrows \$500 from a money lender. The bill is renewed every half year with an increase of 12 per cent. What time will elapse before it reaches \$500? (Given  $\log 112 = 2.049218$ ).

10. (1) Find the area of a triangle whose sides are 942, 812, 1270 feet respectively.

(2) Show that in any triangle

$$(b^2 - c^2) \cot A + (c^2 - a^2) \cot B + (a^2 - b^2) \cot C = 0.$$

11. Prove that in any triangle

$$(1) \frac{a-b}{c} = \frac{\sin \frac{A-B}{2}}{\sin \frac{A+B}{2}}$$

$$(2) \frac{a+b}{a-b} = \frac{\tan \frac{A+B}{2}}{\tan \frac{A-B}{2}}$$

12. From the top of a hill the angles of depression of two consecutive mile stones on a straight level road are found to be  $12^\circ 13'$  and  $2^\circ 45'$ . Find the height of the hill.

13. Solve the following equations :

$$(1) ax^2 + bx + c = 0$$

$$(2) \frac{1}{x-a} + \frac{2}{x-b} = \frac{3}{x-c}$$

$$(3) x + y = \frac{1}{x} + \frac{1}{y} = \frac{5}{2}$$



14. Simplify (1)  $\frac{x^2 + yz}{(x-y)(x-z)} + \frac{y^2 + xz}{(y-z)(y-x)} + \frac{z^2 + xy}{(z-x)(z-y)}$

(2)  $\frac{15 + 14\sqrt{3}}{15 - 2\sqrt{3}}$

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### THIRD YEAR.

#### MECHANICS—HYDROSTATICS.

WEDNESDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiners,..... { ALEX. JOHNSON, M.A., LL.D.  
JOHN COX, M.A.

1. State the principle of the "constancy of work done" when a machine is in a state of uniform motion, and apply it in the case of the wheel and axle to determine the ratio between the power and the weight raised.

2. Find the centre of gravity of a homogeneous thin plate cut into the form of a triangle.

3. Assuming the formula for the time of oscillation of a pendulum, find the space described by a falling body in one second when the length of the seconds pendulum is  $l$ .

4. A body is immersed in water, how may the weight of a volume of water equal to that of the body be determined when the specific gravity of the body is less than unity? Investigate a formula for finding the specific gravity in this case by the Hydrostatic Balance.

5. Describe and explain the action of the suction pump, pointing out definitely the force which causes the motion in each part.

6. If the weight of 100 cubic inches of dry air at the temp.  $60^\circ$  Fahr. and pressure 30 inches be 31.0117 grains, find the weight of air at the temp.  $65^\circ$  and pressure  $29\frac{1}{2}$  inches contained in a room 13 feet high, 21 feet long and 18 ft. wide.

7. Explain what is meant by "resolving" a force along any two directions at right angles, and show how to find the "resolved parts."

A body of mass 70 lbs. is suspended by strings, whose lengths are 6 ft. and 8 ft., from two points in a horizontal line whose distance apart is 10 ft.; find the tensions of the strings.

8. Define the Moment of a Force about a point.

Masses of 1, 2, 3 and 4 lbs. are suspended from a uniform rod of length 5

feet, at distance of 1, 2, 3 and 4 ft. respectively from one end. If the mass of the rod be 4 lbs., find the point about which it will balance.

9. Explain how you calculate the acceleration produced in a given mass by a given force.

A mass of 70 lbs. is placed on a smooth table 8 ft. from its edge, and connected by a light string passing over the edge with a mass of 10 lbs. hanging freely; in what time will the first mass leave the table?

10. A shot of 800 lbs. is projected with a velocity of 2000 feet per second from a gun whose barrel is 40 feet long; calculate:

- (1) The time occupied in traversing the barrel.
- (2) The energy of the shot.
- (3) The horse-power at which the gun works during the discharge.

11. A body describes a circle of radius  $r$  with velocity  $v$  feet per second. Shew that the acceleration to the center of the circle is

$$f = \frac{v^2}{r}$$

A mass of 20 lbs. describes a circle of radius 10 feet once in 5 seconds. Find the pull upon the string which attaches it to the centre.

12. How much water must be added to 27 oz. of a salt solution whose sp. gr. is 1.08, so that the sp. gr. of the mixture may be 1.05?

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### THIRD YEAR.

#### ASTRONOMY—OPTICS.

TUESDAY, APRIL 14TH :—MORNING, 9 TO 12.

*Examiners*,..... { ALEXANDER JOHNSON, M.A., LL.D.  
JOHN COX, M.A.

1. Suppose a person standing with his back to the sun at mid-day, and that the earth rolls away from beneath him, while he remains suspended in space, describe the phenomena presented to him.

2. The spire and upper part of a church are brightly illuminated by the sun in the evening, while the lower part is covered by shadow. The shadow moves upwards and gradually covers the whole; give the true explanation of this, without any vagueness of statement.

3. Explain the phases of the Moon.



(a) Calculate the diminution of gravity due to this cause in lat.  $23^{\circ}$ .

2. For a particle uniformly accelerated, prove  $v = ft$ ,  $s = \frac{1}{2}ft^2$ ,  $v^2 = 2fs$ .

(a) The mouth of a cannon is 4 feet above the ground; a ball is fired from it horizontally with a velocity of 2,000 feet per second, find by the Second Law of Motion:

(1) The time before the ball strikes the ground;

(2) The distance of the point where it strikes.

3. In the Inclined Plane, find the ratio of the Power to the Resistance, when the Power is parallel to the length of the plane.

4. Find the centre of pressure of a plane rectangular surface immersed in a liquid, when one of its sides coincides with the level of the liquid.

5. British standard gold contains 11 parts by weight of pure gold (*s.g.* = 19.35) and one part of copper (*s.g.* = 8.90), find its specific gravity.

6. Explain the principle of the Barometer. When the height of the mercurial barometer changes from 29.45 ins. to 30.23 ins., what is the change in the weight of 1000 cub. inches of air, assuming that 100 cub. ins. of air weigh 31 grains at the former pressure?

7. Find a formula for the time of swing of a pendulum of length  $l$ .

When a magnet is placed beneath the steel bob of a seconds pendulum, it is found to make 36 small swings in 64 seconds. Compare the attraction of the magnet upon the bob with the weight of the bob.

8. Find the resultant of two parallel forces acting in the same direction.

A uniform plank weighing 100 lbs. rests symmetrically on two supports, and a weight of 50 lbs. is placed 4 feet from the centre. What weight must be placed on it, and where, in order that the pressures on the two supports may be each equal to 95 lbs?

9. A mass of 1 ton falls from a height of 16 feet on the end of a vertical pile and drives it half an inch deeper into the ground. Assuming the driving force on the head of the pile to be constant while it lasts, find its magnitude and the duration of its action.

10. How long will it take a force of one poundal to stop a train of 200 tons going 20 miles an hour?

11. Find (a) the centre of gravity of weights 2, 4, 6, 8 lbs. at the corners of a square whose side is 2 feet long.

(b) The resultant of forces 2, 4, 6, 8 lbs. acting from the centre of the square towards the four corners.

12. A cylindrical diving bell, whose height is 6 feet and diameter 6 feet, is let down till the top is at a depth of 80 feet; the water barometer is at  $33\frac{1}{2}$  feet; find the pressure of the air in the bell; and how much more air must be pumped in to drive out all the water?

How is the tension of the rope of a diving bell affected by opening a bottle of soda water inside the bell?

## B.A. ORDINARY EXAMINATIONS, 1896.

### ASTRONOMY—OPTICS.

TUESDAY, APRIL 14TH :—9 TO 12 A.M.

*Examiners*, ..... { ALEX. JOHNSON, M.A., LL.D.  
JOHN COX, M.A.

1. Towards the end of October the constellation Orion may be seen from the steps of the Centre Building by looking in the direction of McGill College avenue about 10 p.m.; at the end of January it may be seen by looking westwards in the direction of Sherbrooke Street about 7 p.m. Supposing the hour of sunset the same, explain this clearly. State three possible explanations, pointing out the true one.

2. Prove that for objects within  $80^\circ$  of the zenith the correction for refraction is proportional to tangent of the zenith distance.

3. Prove that the altitude of the pole at any place is equal to the latitude of the place; and explain how the theorem is used in determining the figure and size of the Earth.

4. Investigate a method for finding the distance of the Moon.

5. Describe the Astronomical telescope, and find its magnifying power.



6. The refractive indices of the red and the violet rays in water are 1.330 and 1.342 respectively ; find the *dispersion* produced by a water prism of  $4^\circ$  angle.

7. Why do not Lunar Eclipses occur at every full moon ? Explain "Lunar Ecliptic Limits." On which limb of the Moon is the shadow of an eclipse first seen, and why ?

It is 5 days after a lunar eclipse occurring in March. To what point of the compass and at what altitude would you look for the moon in Montreal at 4 a.m. ? Sketch roughly her shape at the time.

8. On the wall of Queen's College, Cambridge, is a Sun-dial constructed by Sir Isaac Newton. Beneath it are painted lists of corrections to be applied to the dial's readings to give the right time of day. Explain why these are necessary.

9. Describe and explain the use of the Transit Circle. Mention any corrections which have to be applied to its readings.

10. Find the position and magnitude of the image of a man 6 feet high standing 40 feet in front of a concave mirror of 10 feet focal length. Shew by a figure the course of the pencil of rays by which he may see his own feet.

11. Shew that

$$\frac{1}{f} = (\mu - 1) \left( \frac{1}{r} - \frac{1}{r^1} \right)$$

where  $f$  is the focal length of a lens,  $r, r^1$  the radii of its surfaces, and  $\mu$  the index of refraction.

12. A person who sees distinctly at a distance of 4 inches uses spectacles to read a book held at 10 inches distance. What must be the focal length and nature of the lenses ? How will the apparent size of the point be affected ?

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## HONOUR EXAMINATIONS IN MATHEMATICS.

## FIRST YEAR.

GEOMETRY (*First Paper*).

MONDAY, APRIL 20TH:—MORNING, 9 TO 12.

*Examiner*, ..... ALEXANDER JOHNSON, M.A., LL.D.*Assistant Examiner*, ..... REV. H. M. TORY, B.A.

1. If the bisectors of the base angles of a triangle be equal, the triangle is isosceles.

2. Given base of a triangle, the vertical angle and the difference of sides, construct the triangle.

3. Given the base of a triangle, the difference of sides, and the locus of vertex a fixed straight line; construct the triangle.

4. Describe a circle touching two given straight lines and a given circle.

5. Given base, difference of base angles, and locus of vertex a given straight line intersecting the base; construct the triangle.

6. A triangle is given in species, one vertex turns round a fixed point, while another vertex moves along the circumference of a given circle; find the locus of the third vertex.

7. Three times the sum of the squares on the sides of a triangle is equal to four times the sum of the squares on the bisectors of the sides.

8. The bisectors of the internal and external vertical angles of a triangle, produced, meet the circumscribed circle in the middle points of the arcs of the segments into which the base divides the circle; the line forming these points is the diameter which bisects the base at right angles.

9. Inscribe in a given triangle a parallelogram of given area not exceeding half the given triangle.

10. If perpendiculars be drawn from any point on the circumference of a circle to the sides of an inscribed triangle, their feet are in the same straight line.

11. Given the base of a triangle, the sum of its sides, and the locus of its vertex a fixed straight line; construct the triangle.

12. Through a given point, draw a straight line so as to form with the sides of a given angle a triangle of given area.

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FIRST YEAR.

GEOMETRY—(*Second Paper*).

MONDAY, APRIL 20TH :—AFTERNOON, 2 TO 5.

*Examiner*,.....ALEXANDER JOHNSON, M.A., LL.D.  
*Assistant Examiner*.....REV. H. M. TORY, B.A.

1. Reciprocate the theorem that the three perpendiculars of a triangle meet in the same point.

2. If two triangles be such that each vertex of one is the pole of a side of the other with regard to a given circle, prove that the straight lines joining corresponding vertices are concurrent.

3. A common tangent to any two circles is divided harmonically by any other circle having the same radical axis as the two given circles.

4. Given a triangle, describe the circle with respect to which the triangle is self-conjugate.

5. The anharmonic ratio of four points in a straight line is equal to that of the pencil formed by their four polars.

6. Given any three circles, prove that the lines joining the centres of each to the internal centre of similitude of the other two are concurrent.

7. The reciprocals of lines in harmonical progression are in arithmetical progression, and conversely the reciprocal of lines in arithmetical progression are in harmonical progression.

8. Any quadrilateral is divided by a straight line into two others; prove that the intersections of the diagonals of the three lie in a straight line.

9. The radical axes of each pair of a system of three circles meet in a point.

10. If through any point inside or outside a circle secants be drawn, the straight lines joining the extremities of the chords intersect on the polar of that point.

11. If two tangents be drawn to a circle, any third tangent will be cut harmonically by its point of contact, the two former tangents, and their chord of contact.

12. Describe a circle touching three given circles.

### FIRST YEAR.

#### ALGEBRA—THEORY OF EQUATIONS.

WEDNESDAY, APRIL 22ND :—MORNING, 9 TO 12.

*Examiner*,.....ALEX. JOHNSON, M.A., LL.D.  
*Assistant Examiner*,.....REV. H. M. TORY, B.A.

1. By the method of Indeterminate coefficients show that

$$\sqrt{1+x+x^2+\text{etc.}} = 1 + \frac{1}{2}x + \frac{1}{8}x^2 + \text{etc.}$$

2. Find the number of different triangles into which a polygon of  $n$  sides may be divided by joining the angular points.

3. Prove that any number consisting of an even number of digits, in a system whose radix is  $r$ , is divisible by  $r+1$ , if the digits equidistant from one another are the same.

4. Show that the equation

$$x^6 - 4x^2 + 3 = 0$$

has at least two imaginary roots.

5. Calculate by Newton's method the root between 0 and 1 of the equation

$$x^4 - 8x^3 + 12x^2 + 8x - 4 = 0.$$

6. Prove that the roots of the equation

$$(x-a)(x-b)(x-c) - l^2(x-a) - m^2(x-b) - n^2(x-c) = 0$$

are all real.

7. Let  $f(x)$  be any rational integral function of  $x$  and  $f_1(x)$  the first derived function; then will  $f_1(x) = \frac{f(x)}{x-a} + \frac{f(x)}{x-b} + \frac{f(x)}{x-c} + \text{etc.}$  where  $a, b, c, \dots$  etc., are the roots of the equation  $f(x) = 0$ .

8. Solve the equations (1)  $x^4 + 2x^3 - 5x^2 + 6x + 2 = 0$ , which has a root  $-2 + \sqrt{3}$

(2)  $x^3 - 3x^2 + 4 = 0$ , two of its roots being equal.

9. Between two consecutive real roots  $a$  and  $b$  of the equation  $f(x) = 0$ , there lies at least one real root of the equation  $f'(x) = 0$ .

10. Find by Sturm's theorem the number and situation of the real roots of the equation  $x^3 - 7x + 7 = 0$ .

11. (1) Prove the Binomial theorem when the index is a positive fraction.

(2) Expand to four terms  $(4x - 8x)^{-\frac{1}{2}}$

12. Resolve  $\frac{23x - 11x^2}{(2x - 1)(9 - x^2)}$  into partial fraction.

## SECOND YEAR.

### ANALYTICAL GEOMETRY. (*First Paper.*)

MONDAY, APRIL 20TH:—MORNING, 9 TO 12.

*Examiner*,.....ALEXANDER JOHNSTON, M.A., LL.D.

1. Define a conic section, and find its equation, distinguishing the ellipse, hyperbola and parabola.

*a.* Reduce the equations in the three cases to their simplest forms, and thence find the shapes of the different curves.

2. Define conjugate diameters of a hyperbola, and show that there is an infinite number of pairs of them, for which, as axes, the equation is in its simplest form.

*a.* Plot the curve  $\frac{x^2}{16} - \frac{y^2}{9} = 1$  (the axes being rectangular), and draw on the same figure two conjugate diameters, of which one passes through the point  $8, 3\sqrt{3}$

3. Show that in the hyperbola the rectangle under the focal radii vectors to any point  $x'y'$  on the curve is equal to the square of the semi-diameter conjugate to that passing through the point.

4. Prove by transformation of co-ordinates that the equation of the hyperbola referred to the asymptotes as axes is

$$xy = \frac{a^2 + b^2}{4}$$

and give the geometrical interpretation.



5. Find the equations of the tangent and normal to a parabola at any point on it, and thence show that the sub-normal is constant.

6. Prove analytically that the rectangles under the segments of all chords of a circle which pass through the same point are equal.

7. Find the pole of  $ax + by + c = 0$  with regard to the circle

$$x^2 + y^2 = r^2.$$

8. Find the co-ordinates of the points in which a given line

$$x \cos a + y \sin a - p = 0$$

meets the circle  $x^2 + y^2 = r^2$

9. The co-ordinates of the base of a triangle are  $x_1, y_1$  and  $x_2, y_2$ ; find the locus of the vertex if the difference of the base angles be  $45^\circ$ .

10. Taking the same base as in question 9, if the extremities of the base of another triangle be  $x_3, y_3, x_4, y_4$ , if the two triangles have a common vertex, and if the sum of their areas be  $k^2$ , find the locus of the common vertex.

11. Find the locus of a point equidistant from two given points

$$x_1, y_1; x_2, y_2.$$

12. The three perpendiculars of any triangle meet in a point.

## SECOND YEAR.

### ANALYTICAL GEOMETRY (*Second Paper*).

MONDAY, APRIL 20TH:—AFTERNOON, 2 TO 5.

*Examiner*, . . . . . ALEXANDER JOHNSON, M.A., LL.D.

1. Find the condition that two conics, given by the general equation, shall be similar and similarly placed.

2. If on any radius vector to a conic section through a fixed point O, OQ be taken in a constant ratio to OP (P being a point on the curve), find the locus of Q.

3. Express the lengths of two conjugate semi-diameters of an ellipse in terms of the eccentric angle.

4. Given base and product of the tangents of the base angles of a triangle, find the locus of the vertex.

5. Reduce the equation of the parabola

$$(a x + b y)^2 + 2 g x + 2 f y + c = 0 \text{ to the form } y^2 = p x.$$

6. Find the locus of the foot of the perpendicular let fall from either focus of an ellipse on the tangent.

7. Prove that the points on an ellipse, whose normals will pass through a given point  $x^1 y^1$ , are the points of intersection of the given curve with an hyperbola, giving the equation of this latter.

8. Transform the hyperbola

$$11 x^2 + 84 x y - 24 y^2 = 156 \text{ to its axes.}$$

9. Prove by Boole's method that if we transform an equation of the second degree from one set of rectangular axes to another, the quantities  $a + b$  and  $ab - h^2$  will remain unaltered.

10. If from any point O outside an ellipse, two lines be drawn cutting the ellipse, and the points of intersection be joined directly and transversely, by lines cutting one another in P and Q respectively, prove that the straight line P Q is the polar of O.

11. Prove that the condition that  $A x + B y + C = 0$  should be a tangent to

$$(x - a)^2 + (y - b)^2 = r^2$$

is  $\frac{A a + B b + C}{\sqrt{A^2 + B^2}} = r$

12. Find the angle between the two straight lines represented by

$$A x^2 + B x y + C y^2 = 0.$$


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## SECOND YEAR.

## DIFFERENTIAL AND INTEGRAL CALCULUS.

WEDNESDAY, APRIL 22ND :—2 TO 5 P.M.

*Examiner*, ..... ALEX. JOHNSON, M.A., LL.D.

1. Find general formulæ for the equations of the tangent and normal of any curve whose equation is  $y = f(x)$ .

(a) Apply them to the case of the ellipse.

2. Find the length of the subnormal for the curve in question 1, and apply it to show that in a given parabola the subnormal is constant.

3. Prove that the values of  $x$  which render  $f(x)$  a maximum or a minimum are in general roots of the derived equation  $f'(x) = 0$ .

(a) Apply this to

$$a \sec x + b \operatorname{cosec} x.$$

4. Investigate a method for finding the true value of  $\frac{f(x)}{\phi(x)}$  if the numerator and denominator both become 0 for the value  $x = a$ .

(a) Find the value of  $\frac{e^x - e^{-x} - 2x}{(e^x - 1)}$

5. Find by MacLaurin's Theorem the first four terms in the expansion of  $\sec x$ .

6. Differentiate

$$y = \log \tan^{-1} x; y = \tan^{-1} \frac{x}{\sqrt{1-x^2}}; y = \log(\log x)$$

7. Prove that the volume of a right cone is equal to the area of the base multiplied by one-third of the height.

8. Find the length of an arc of the cardioid

$$r = a(1 + \cos \theta)$$

measured from the point for which  $\theta = 0$ .

9. Find the area of a loop of the curve

$$r^2 = a^2 \cos n\theta.$$

10. If the equation of an hyperbola be referred to its axes, prove that the area included between the curve and a double ordinate through the point  $x y$  is

$$x y - ab \log \left( \frac{x}{a} + \frac{y}{b} \right)$$

11. Find  $\int \frac{(A + B \tan x) dx}{a + b \tan x}$

12. Find the formulæ of reduction for

$$\int \frac{x^n dx}{(a + cx^2)^n}; \quad \int x^3 \cos x dx; \quad \int \sin^n \theta d\theta$$

13. Integrate

$$\int \frac{(3x^2 - 1) dx}{x^2 - 3x + 2}; \quad \int x^n \log x dx.$$

14. Integrate

$$\int \frac{d\theta}{\sin \theta}; \quad \int \frac{dx}{x \sqrt{x^2 - a^2}}; \quad \int \frac{dx}{x^2 - a^2}$$

## SECOND YEAR.

### PLANE AND SPHERICAL TRIGONOMETRY.

WEDNESDAY, APRIL 22ND:—AFTERNOON, 2 TO 5.

*Examiner*,..... ALEX. JOHNSON, M.A., LL.D.

1. In a spherical triangle, right-angled at B, the hypotenuse is  $64^\circ$  and the angle C is  $46^\circ$ ; find the side BC.

2. The sides  $a$  and  $b$  of a spherical triangle are  $38^\circ 30'$  and  $40^\circ$  respectively, and the angle A is  $30^\circ 28'$ ; find the angle B.

(a) Prove the formula you employ.

3. Prove that in a spherical triangle

$$\sin C \cot A = \cot a \sin b - \cos b \cos C.$$

4. The sum of the angles of a spherical lies between two and six right angles.

5. State and prove Demoivre's theorem for a negative index.

6. Find  $\cos 7\theta$  in terms of  $\sin \theta$  and  $\cos \theta$ .

7. Prove that in the Napierian system

$$\log y = (y - 1) - \frac{1}{2}(y - 1)^2 + \frac{1}{3}(y - 1)^3$$

8. Prove also that

$$\log u = 2 \left\{ \frac{u-1}{u+1} + \frac{1}{2} \left( \frac{u-1}{u+1} \right)^3 + \frac{1}{5} \left( \frac{u-1}{u+1} \right)^5 + \text{etc.} \right\}$$

9. Find the sum of  $n$  terms of the series

$$\tan A + 2 \tan 2A + 2^2 \tan 2^2 A + \text{etc.}$$

B.A. HONOURS IN MATHEMATICS AND NATURAL PHILOSOPHY,  
1896.

PLANETARY THEORY.

WEDNESDAY, APRIL 1ST:—MORNING, 9 TO 12.

*Examiner*,.....ALEXANDER JOHNSON, M.A., LL.D.

1. Give an outline of the Planetary Theory considered as a problem in Mechanics, stating the leading steps and the difficulties to be overcome. State definitely the Astronomical data and quaerenda.

2. In elliptic motion prove

$$r = a(1 - e \cos u)$$

$$\tan \frac{\theta_0 - \varpi_0}{2} = \sqrt{\frac{1+e}{1-e}} \tan \frac{u}{2}$$

$$nt + \varepsilon - \varpi_0 = u - e \sin u$$

3. For undisturbed motion prove

$$\frac{1}{r} = \frac{\mu}{h^2} \left\{ 1 + e \cos (\theta_0 - \varpi_0) \right\}$$

4. Investigate an expression for the *disturbing function* in Cartesian co-ordinates. (a) Transform it so as to be expressed in terms of the polar co-ordinates of the projections of the disturbed and disturbing planets on a fixed plane and of their distances from it.



5. If  $x, y, z$ , be the co-ordinates,  $u, v, w$ , the velocities of a particle with reference to three rectangular axes moving with angular velocities  $\phi_1, \phi_2, \phi$ , about their instantaneous positions, and  $X, Y, Z$  be the accelerations due to impressed forces in the directions of the axes, find expressions for  $X, Y, Z$ .

6. Explain fully the method of *variation of parameters* in integration, illustrating it by an example.

7. Prove

$$\frac{dR}{d\psi} = \frac{dR}{d\varepsilon} + \frac{dR}{d\varpi}$$

$$\frac{de}{dt} = \frac{na(1-e^2)}{\mu e} \frac{dR}{d\varepsilon} - \frac{na\sqrt{1-e^2}}{\mu e} \left( \frac{dR}{d\varepsilon} + \frac{dR}{d\varpi} \right).$$

8. Assuming

$$\frac{de}{dt} = -aD_2e' \sin(\varpi - \varpi')$$

and  $e \frac{d\varpi}{dt} = a\{D_1e - D_2e' \cos(\varpi - \varpi')\}$  and two similar equations; prove by integration that

$$e^2 = M_1^2 + M_2^2 + 2M_1M_2 \cos\{(g_1 - g_2)t + \gamma_1 - \gamma_2\}$$

$$\tan \varpi = \frac{M_1 \sin(g_1 t + \gamma_1) + M_2 \sin(g_2 t + \gamma_2)}{M_1 \cos(g_1 t + \gamma_1) + M_2 \cos(g_2 t + \gamma_2)}$$

where  $M_1, M_2, g_1, g_2$ , etc., are constants: with similar equations for  $e'$  and  $\varpi'$ .

9. Apply the formulae of question 8 to determine: 1° whether the apsidal line oscillates or not; and 2° the extent and period of its oscillations, if any.

10. Show that the variations of the elements of the orbit produced by the periodical terms in  $R$  are periodical in form.

B. A. HONOUR EXAMINATIONS, 1896.

MATHEMATICS AND NATURAL PHILOSOPHY.

DIFFERENTIAL EQUATIONS.

TUESDAY, APRIL 7TH:—MORNING, 9 TO 12.

*Examiner*, ..... ALEXANDER JOHNSON, M.A., LL.D.

1. Find by the symbolical method the solution of the equation

$$\frac{d u^2}{d x^2} + n^2 u = 1 + x + x^2$$

2. Prove that a partial differential equation of the first order of the form
- $u = f(v)$
- can only lead to a partial differential equation of the second order of the form

$$Rr + Ss + Tt = V$$

when  $u$  and  $v$  are so related as to satisfy identically the condition

$$\frac{d u}{d p} \frac{d v}{d q} - \frac{d u}{d q} \frac{d v}{d p} = 0$$

3. Prove that the differential equation of the first order which results from a primitive of the form
- $u = f(v)$
- , where
- $u$
- and
- $v$
- are determinate functions of
- $x, y, z$
- , is necessarily linear.

4. Find the solution of the simultaneous equations

$$(a) \quad \frac{d x}{d t} + 4 x + \frac{y}{4} = 0; \quad \frac{d y}{d t} + 3 y - x = 0;$$

$$(b) \quad \frac{d x}{d t} + \frac{2 x}{t} = 1; \quad \frac{d y}{d t} = x + y + \frac{2 x}{t} - 1$$

5. Find the condition that

$$P dx + Q dy + R dz = 0$$

may be derived from a single primitive.

6. Find the orthogonal trajectory of a system of confocal ellipses.

7. Find the complete primitive of

$$n x^3 \frac{d^2 y}{d x^2} = \left( y - x \frac{d y}{d x} \right)^2$$

8. Find the complete primitive of

$$\frac{d y}{d x^3} - \frac{d^2 y}{d x^2} - \frac{d y}{d x} + y = 0$$

9. Investigate a method for finding the solution of an equation of the form

$$y = x f(p) + \phi(p)$$

10. Find the complete primitive of Clairaut's equation

$$y = x p + f(p)$$

11. Find the conditions under which the equation  $M dx + N dy = 0$  can be made integrable by a factor  $\mu$  which is a function of the product  $xy$ .

12. Find the solution of the linear differential equation of the first order and degree

$$\frac{d y}{d x} + P y = Q$$

when  $P$  and  $Q$  are functions of  $x$ .

$$(a) \text{ Integrate } \frac{d y}{d x} + y \cos x = \frac{\sin^2 x}{2}$$

B.A. HONOUR EXAMINATIONS, 1896.

MATHEMATICS AND NATURAL PHILOSOPHY.

CALCULUS.

WEDNESDAY, APRIL 8TH:—MORNING, 9 TO 12.

*Examiner*,.....ALEXANDER JOHNSON, M.A., LL.D.

1. Eliminate the circular and exponential functions from  $y = e^x \sin x$ .

2. Eliminate the arbitrary functions from

$$(a) \quad x^2 + y^2 + z^2 = \phi(ax + by + cz)$$

$$(b) \quad z = x \phi(ax + by) + y \psi(ax + by).$$

3. If  $V$  be a function of  $r$ , where  $r^2 = x^2 + y^2 + z^2$ , prove that

$$\frac{d^2 V}{dx^2} + \frac{d^2 V}{dy^2} + \frac{d^2 V}{dz^2} = \frac{d^2 V}{dr^2} + \frac{2}{r} \frac{dV}{dr}$$

4. Find the equations of the hypocycloid.

5. Find the radius of curvature at any point in the spiral of Archimedes,  $r = a \theta$ .

6. If the equation of a curve be

$$u = f(x, y) = 0$$

and  $L = \frac{du}{dx}$  ,  $M = \frac{du}{dy}$  ,  $A = \frac{d^2u}{dx^2}$  etc.,

prove that the radius of curvature at any point is

$$\pm \frac{(L^2 + M^2)^{\frac{3}{2}}}{AM^2 - 2BLM + CL^2}$$

7. Prove that the envelope of the system of lines  $\frac{x}{l} + \frac{y}{m} = 1$  ,

where  $l$  and  $m$  are connected by the equation  $\frac{l}{a} + \frac{m}{b} = 1$  is the parabola

$$\left(\frac{x}{a}\right)^{\frac{1}{2}} + \left(\frac{y}{b}\right)^{\frac{1}{2}} = 1$$

8. Find the moment of inertia of the ellipsoid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$$

about one of its axes.

9. Prove that the volume included within the surface represented by

$$F\left(\frac{x}{a}, \frac{y}{b}, \frac{z}{c}\right) = 0$$

is  $abc \times$  the volume of the surface

$$F(x, y, z) = 0.$$

(a) Hence find the volume of an ellipsoidal cap.

10. Show how to find an expression for the area bounded by any closed curve on a sphere.

11. Trace the curve

$$a^3 y^2 = bx^4 + x^5$$

proving that the origin is a double cusp.

12. Find the asymptotes to the curve

$$y^4 - x^4 + 2ax^2y = b^2x^2.$$

## B.A. AND THIRD YEAR.

## GEOMETRY OF THREE DIMENSIONS.

MONDAY, APRIL 20TH:—MORNING, 9 TO 12.

*Examiner*,..... ALEXANDER JOHNSON, M.A., LL.D.

1. Investigate the differential equation of surfaces generated by right lines which meet a fixed axis, viz.:—

$$r x^2 + 2 s x y + t y^2 = 0.$$

2. Find the equation of the right conoid passing through the axis of  $z$  and through the plane curve whose equations are

$$x = a, y^2 = k z.$$

3. Define a geodesic line, and prove that the plane of two consecutive elements of the geodesic contains the normal to the surface.

4. The tangent planes to the surface of centres at the two points where any normal cuts it cut each other at right angles.

5. Find the lines of curvature and the principal sections at any point of a surface generated by the revolution of any plane curve round an axis in its plane.

6. Any tangent plane to a surface is intersected by a consecutive tangent plane in the diameter of the *indicatrix* which is conjugate to the direction in which the consecutive point is taken.

7. Define the *wave surface* and find its equation. Show that the section by one of the principal planes breaks up into a circle and an ellipse.

8 Show that the length of the  $\perp$   $P$  from the point  $x_1 y_1 z_1$  on the line joining the two points  $x_2 y_2 z_2, x_3 y_3 z_3$  is given by the equation

$$P^2 r^2 = \begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix}^2 + \begin{vmatrix} y_1 & z_1 & 1 \\ y_2 & z_2 & 1 \\ y_3 & z_3 & 1 \end{vmatrix}^2 + \begin{vmatrix} z_1 & x_1 & 1 \\ z_2 & x_2 & 1 \\ z_3 & x_3 & 1 \end{vmatrix}^2$$

$$\text{where } r^2 = (x_2 - x_3)^2 + (y_2 - y_3)^2 + (z_2 - z_3)^2$$



9. Prove two confocal quadrics cut each other everywhere at right angles.

10. Find an expression for the distance between the point of contact of any tangent plane, and its pole with regard to any confocal surface.

11. If a system of quadrics pass through a common curve of intersection, the polars of a fixed line generate an hyperboloid of one sheet.

12. Prove that in the ellipsoid any two circular sections of opposite system lie on the same sphere.

13. Find the condition that

$$x \cos \alpha + y \cos \beta + z \cos \gamma = 0$$

should touch the cone

$$a x^2 + b y^2 + c z^2 = 0$$

14. Find the equations of a straight line passing through a given point and making given angles with the axes.

15. Find the equation to the plane which contains a given line and is perpendicular to a given plane.

16. Find a point on an ellipsoid such that the tangent plane cuts off equal intercepts from the axes.

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## B.A. AND THIRD YEAR.

### ASTRONOMY.

WEDNESDAY, APRIL 22ND :—9 TO 12 A.M.

*Examiner*,.....ALEX. JOHNSON, M.A., LL.D.

1. Find the declination of the sun, when for a given place within the arctic circle the sun at mid-day just appears above the horizon.

2. At noon on March 25th, suppose that the sun's declination is  $1^{\circ} 42' 29''$ , and the difference of right ascension between the sun and a

star 13h. 1m. 49s. At noon on September 18th, let the sun's declination be  $1^{\circ} 59' 43''$ , and let it be distant from the star 1h. 36m. 0s in right ascension. At noon on September 19th, let the declination of the sun be  $1^{\circ} 36' 28''$ , and the difference of right ascension be 1h. 32m. 24s. find the right ascension of the star, and of the sun at the time of the first observation.

3. If the obliquity of the ecliptic be determined from observations of the R. A. and Dec. of the sun near one of the solstices; and if  $\alpha$  be the difference between the R. A. and  $90^{\circ}$ , show that the correction ( $x$ ) on the obliquity is given by

$$x = \tan^2 \frac{\alpha}{2} \sin 2 \delta + \frac{1}{2} \tan^4 \frac{\alpha}{2} \sin 4 \delta + \&c.$$

4. Find the hour angle and amplitude of Antares (Dec.  $26^{\circ} 6' S$ .) when it sets to an observer in Lat.  $39^{\circ} 57' N$ .

5. If the aberration of a star in longitude be the same as its aberration in latitude prove that

$$\sin 2 \lambda = 2 \cot (\theta - l)$$

where  $l$  and  $\lambda$  are the longitude and latitude respectively of the star and  $\theta$  the longitude of the sun.

6. Given the altitude of a known star when it is on the prime vertical, find the latitude of the place.

7. Investigate the general differential equation of refraction.

(a) State Simpson's assumption and thence derive his formula.

8. Show how to find the time occupied by the sun in rising at a given place on a given day.

9. What is meant by the *right ascension of the meridian*? How may it be found?

## B.A. AND THIRD YEAR.

## OPTICS.

MONDAY, APRIL 13TH:—MORNING, 9 TO 12.

*Examiner*,.....JOHN COX, M.A.

1. State the laws of the illumination of a small area by a bright surface near it.

An infinitely long luminous vertical straight line stands on a horizontal table. Show that the illumination at a point on the table distant  $r$  from the foot of the line varies inversely as  $r$ .

2. A prism of refractive index  $\mu^1$  and angle  $60^\circ$  is enclosed between two others of indices  $\mu$  and angle  $60^\circ$ , their edges being turned the opposite way to that of the first. Shew that, if a ray passes through without deviation, its course must be symmetrical and

$$3\mu^2 = \mu^1{}^2 + \mu^1 + 1.$$

3. A bright point is placed in front of a convex spherical refracting surface of index  $\mu$ . Shew that the distance of the point from its conjugate focus will be a minimum when the distance of the point from the surface is to the radius of the surface as  $1 : 1 + v\mu$ .

4. Explain the formation of primary and secondary focal lines in the case of oblique reflection; and find the position of the lines for oblique reflection at a spherical surface.

5. Explain the terms *Spherical Aberration*, *Least Circle of Aberration*. Point out the use of the latter in connection with the *Definition* of an image.

6. Prove that a ray is bent towards the thicker part of a lens.

Two thin lenses of equal numerical focal length  $f$  are placed on the same axis at a distance  $a$  apart, the one nearest the source of light being concave and the other convex. Shew that the least distance between an object and its final image is  $a + \frac{4f^2}{a}$

7. Describe the Astronomical Telescope. Draw two figures shewing; (1) the course of a pencil from a distant point to the eye, (2) the position of an arrow and its image, when the telescope is adjusted for distinct vision at 10 inches.

Find the radius of the field of view by whole pencils.

8. A Galileo's and a common telescope have the same object glass, and their eye-glasses have equal focal lengths; also the uniformly bright field is of the same extent in both; prove that the diameter of the stop in the common telescope should be half the difference of the breadths of the eye-glasses.

9. Give a general explanation of the Primary Rainbow.

### DYNAMICS.

SATURDAY, APRIL 4TH:—MORNING, 9 TO 12.

*Examiner*, ..... JOHN COX, M.A.

1. Find expressions for the acceleration of a particle along the tangent and normal to its path.

State Kepler's Third Law and prove its truth for bodies describing different *circles* round the sun.

2. Shew that the length of the line of quickest descent from the focus to a parabola whose axis is vertical and vertex upwards is equal to that of the latus rectum.

3. A particle moves from rest under an attraction to a fixed point varying as the distance. Determine the motion.

Shew that a particle *inside* the earth would be under such a force; and calculate the time it would take to fall through a diametral tunnel from one side to the other. ( $R = 4000$  miles;  $g = 32$ .)

4. Find the *range* and *time of flight* of a particle projected at an elevation  $a$  with a velocity  $u$ .

If  $\theta$  be the additional elevation required to give the same range on a plane inclined to the horizon at an angle  $\beta$ , prove that

$$\tan \theta = \frac{\sin \beta, \sin^2 a}{\sin (2a + \beta)}$$

5. Investigate the equation for central orbits,

$$\frac{d^2 u}{d\theta^2} + u = \frac{P}{h^2 u^2}$$

If  $P = \mu r + \frac{v}{r^3}$ , and the particle be projected from *con apse* at distance  $a = \frac{\sqrt[3]{v}}{\mu}$  with velocity  $\sqrt[3]{\mu v}$  prove that the equation to the orbit is

$$v^2 = \frac{a^2}{1 + \theta^2}$$

6. If the central force  $a$  inversely as (dist.)<sup>2</sup> prove that the orbit is a conic about the centre of force as a focus, and prove the formula

$$v^2 = \mu \left( \frac{2}{r} - \frac{1}{a} \right)$$

Supposing the earth's present orbit to be circular, examine the effect of a sudden annihilation of half the sun's mass.

7. A particle attached by a string to a fixed point *just* makes complete revolutions in a vertical plane. Shew that the tension of the string when the particle is at the bottom of the circle is six times the weight of the particle.

8. Shew that if two equal balls impinge directly with velocities  $\frac{1+\epsilon}{1-\epsilon} V$  and  $-V$  respectively, the former will be brought to rest.

9. Explain D'Alembert's Principle, and shew how to deduce the general equations of motion of a rigid body.

10. Find the Moments of Inertia of

- (1) a circle about a diameter,
- (2) a cube about one edge.

11. A cube of mass  $M$  can swing about a horizontal edge (length  $2a$ ). Find (1) the equation of motion,  
(2) the time of a small oscillation,  
(3) the length of the simple equivalent pendulum.

### STATICS.

FRIDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner, ..... JOHN COX, M.A.

1. Shew that any system of forces acting in one plane may be reduced to a single force and a couple; and deduce the conditions of equilibrium.

Shew that no uniform rod can rest partly without a fixed smooth hemispherical bowl at an inclination to the horizon greater than  $\sin^{-1} \frac{1}{\sqrt{3}}$ .

2. State the laws of friction. Explain "coefficient," "angle," "cone" of friction.

3. A hemisphere is supported by friction with its curved surface in contact with a vertical and a horizontal plane; shew that if  $\phi$  be the limited inclination of the plane base to the horizon,

$$\sin \phi = \frac{8 \mu (1 + \mu)}{3 (1 + \mu^2)}.$$



4. Explain the principle of Virtual Work. Two equal rods, each of length  $2a$ , jointed together by a smooth hinge, are laid symmetrically across a smooth table of breadth,  $b$  ( $< 2a$ ) at right angles to its length. Find the slope of the rods in the position of equilibrium.

5. What are the requisites of a good balance? Investigate the conditions for *sensibility* and *stability*.

6. Find the centres of gravity of

(a) a pyramid on a triangular base.

(b) the area of a loop of the curve  $v = a \cos 3 \phi$ .

(c) the area included between the curves  $y^2 = ax$ , and  $y^2 = 2ax - x^2$  which is above the axis of  $x$ .

7. Investigate the equation to the curve in which a heavy uniform chain hangs between two points.

8. Prove that if  $T$  is the tension of a string stretched round a rough curve at a point where the tangent to the string has turned through an angle  $\phi$  from its position when the tension was  $T_0$ ,

$$T = 8_0 \Sigma \mu \phi.$$

### B.A. HONOURS.

#### THEORY OF POTENTIAL AND ELECTRICITY.

FRIDAY, APRIL 24TH :—MORNING, 9 TO 12.

Examiner, ..... JOHN COX, M.A.

1. Define electric capacity. Find an expression for the energy of a Leyden Jar of capacity  $C$  and charge  $Q$ .

A given charge is to be divided between two unequal jars. Prove that the work spent in charging them will be least when both are charged to the same potential.

2. Prove that the resultant electric force near the surface of a charged conductor is  $4 \pi \sigma$ ,  $\sigma$  being the surface density at the point.

Shew that there must be equal quantities of electricity of opposite sign on the ends of a tube of force.

3. Shew that the potential of a uniformly charged sphere at an external point is the same as if the whole charge were collected at the centre.

If a self-attracting solid sphere of mass  $M$  and radius  $a$  and uniform density shrinks to radius  $a'$ , the density remaining uniform, prove that the work done is

$$\frac{3}{2} M^2 \left( \frac{1}{a} - \frac{1}{a'} \right)$$

the unit of work being that done when two unit masses placed at unit distance are drawn to an infinite distance apart.

4. State what you know about the behaviour of magnetic substances under wide variations of temperature.

5. Prove that the couple produced on a small magnet by a large magnet at a distance is twice as great in Gauss' "end-on" as in the "broad side-on" position.

6. The difference of potential between the poles of a battery of 1.2 shew internal resistance in 6 volts when the poles are insulated, and 4.5 volts when they are joined by a wire. Find the resistance of the wire.

7. Define the coefficient of mutual induction of two circuits and shew that it is measured by the number of lines of magnetic induction, due to a unit current in the one, which pass through the other.

8. A circular coil of wire of 50 turns and 30 cm. diameter rotates 20 times per second about a vertical axis. Find the average E. M. F. produced, if  $H = 0.18$ .

#### B.A. HONOURS IN MATHEMATICS.

#### THEORY OF LIGHT AND HYDROMECHANICS.

FRIDAY, APRIL 17TH:—9 TO 12 A.M.

*Examiner*,.....JOHN COX, M.A.

1. Write down an equation corresponding to a vibration of amplitude  $a$  and wave-length  $\lambda$  travelling along the axis of  $x$  with velocity  $v$ .

If  $T$  be the period and  $a$  the amplitude of a simple harmonic motion, and if  $v$  be the velocity and  $s$  the distance from the centre of the moving point at a given instant, shew that

$$a = \left( \frac{T^2 v^2}{4 \pi^2} + s^2 \right)^{\frac{1}{2}}$$

2. Explain Huyghens' Principle, and apply it to explain refraction.

Find by the method of the wave-theory a formula for refraction of a small pencil at a spherical surface.

3. Describe in detail some experimental method for determining accurately the refractive index of a sample of glass.

4. Explain the principle of the Diffraction Grating. For light incident obliquely on the grating, shew that the deviation of the  $n$ th spectrum

will be a minimum when the angle of incidence is equal to the angle of diffraction, and that in this case

$$2(a + b) \sin \frac{D}{2} = n \lambda$$

where  $a$  and  $b$  are the breadths of an aperture and a ruling respectively.

5. Point out the connection between the facts of double refraction and polarization as seen in (a) iceland spar, (b) tourmaline, and discuss their bearing on the nature of luminous vibrations.

6. Shew that (neglecting temperature) the pressure  $p$  and height  $z$  in the atmosphere are connected by an equation of the form,

$$p = C e^{\frac{g}{k} z}$$

Deduce a formula for comparing heights by the barometer.

7. Find (a) the whole pressure on a parabolic area bounded by the latus rectum immersed vertically with its vertex in the surface of a homogeneous liquid.

(b) The centre of pressure of the area.

(c) the centre of pressure when the density varies as the depth.

8. Obtain the equation

$$p = \frac{t}{r} + \frac{t^3}{r^3}$$

for a flexible surface exposed to the action of a fluid.

## ENGLISH LANGUAGE AND LITERATURE.

SESSIONAL EXAMINATIONS, 1896.

FIRST YEAR.

ENGLISH LITERATURE (*Lecture Course*).

FRIDAY, APRIL 10TH:—9 TO 12 A.M.

Examiner, ..... CHAS. E. MOYSE, B.A.

*Answer five questions, namely, 1, 2, 4, 5, 6, or 2, 3, 4, 5, 6.*

(N.B.—Confine yourself strictly to the limits of questions 1, 2 and 3, and number your answers carefully.)

1. (*a*) Mention three important characteristics of the Celt, and name ancient work, literary or other, which illustrates each. (*b*) Make a single definite statement, regarding the Ms. of *Beowulf*, the locality of Hrothgar's mead-hall, the Beowa myth. (*c*) What poem is closely connected with *Beowulf*, and why? (*d*) Mention two Homeric qualities in *Beowulf*. (*e*) In what poem does Byrhtnoth figure, and what important feature is seen in it? (*f*) Name a writer of riddles in Anglo-Saxon, and say where the riddles are found. (*g*) Notice the Riddle of the Sword.

2. (*a*) Make a general statement regarding the severity of monastic discipline in the East as compared with the West. (*b*) Of whom does Tennyson write, "patient on this tall pillar"? (*c*) How did the Benedictines regard labour? How did Chaucer's Monk regard it? (*d*) Where do you find the original account of Caedmon? (*e*) State definitely what Alfred says of learning south of the Thames, and say where his remarks are found. (*f*) When does a chronicle become of historical value? Illustrate from the *Hist.ria Novella* of William of Malmesbury. (*g*) What did St. Francis mean when he said *Ego brevium*? (*h*) Mention a feature discernible in Chaucer's description of the Friar and in Friar Laurence (*Romeo and Juliet*). (*i*) In regard to the Carmina Burana, state the language in which they are written, the class of persons who sang them, and mention one species of song. (*j*) Name a work of Roger Bacon in which he deplores prevailing ignorance.

(*k*) "that tree

That Bungay mounted by his magic spells."

Whence is the quotation taken? What became of the tree?

3. (*a*) Indicate the geographical extension of the Arthurian land. (*b*) Arthur is said to be hidden in the recesses of Etna—what does this show? (*c*) Make a single statement regarding Wolfram von Eschenbach, Geoffrey of Monmouth, William of Newburgh. (*d*) What are the two chief sources from which Tennyson drew material for the King Arthur story?

- (e) "And in that daisied circle as men say,  
Is Merlin prisoner till the judgment day."  
Where is the circle and whence is the quotation taken?

4. Write on the *Coming of Arthur. The Shepherds Calender. The Spanish Tragedy.*

5. Name the critical essayists in verse mentioned in the lectures and a work of each. Write on the *Spectator* and the leading features of its criticism.

6. Write on the political and literary causes of the French Revolution.

FIRST YEAR.—(for Stanstead Wesleyan College).

HENRY MORLEY—First Sketch of English Literature, pp. 210 to 628.

SEEBOHM—Era of the Protestant Revolution.

FRIDAY, APRIL 10TH —9 TO 12 A.M.

Examiners, ..... { CHAS. E. MOYSE, B.A.  
C. W. COLEY, M.A., Ph.D.

A. MORLEY.

(Answer the first three questions and then either questions 4 or 5 or 6.)

1. Give some account of "The Thistle and the Rose" and "The Pastime of Pleasure."

2. Write on Bacon's Essays, and sketch his system of philosophy.

3. Display the inner meaning of the "Merchant of Venice."

4. Name the writer of each of the following works, and indicate briefly, the character of the work itself:—Old Wives' Tale, Sejanus, Leviathan, Ecclesiastical Polity, Spanish Tragedy, Areopagitica, Religio Medici, Oceana, Utopia, Eikonoclastes, Hesperides, Gorboduc.

5. Mention English Spenserians and one work of each. Give some account of "The Shepherd's Calendar".

6. Write on Science in the reign of Charles II.



INTERMEDIATE EXAMINATION, 1896.

ENGLISH HISTORY.

(For Students of Morrin College).

FRIDAY, APRIL 10TH :—2 TO 5 P.M.

Examiners, ..... } CHAS. E. MOYSE, B.A.  
JOHN SHARP, M.A.

(Answers to any six questions will count a full paper.)

1. Sketch the rise of the English people from 449 A.D. to the time of Alfred the Great.
2. What do you understand by Feudalism? Show how it arose in England, its general influence, and how it passed away.
3. Write on the Crusades, describing the movement generally. Indicate the results of the Crusades in England,—Social, Religious, Political.
4. What influences modified the form of the Reformation in England? Show from your answer the significance of the remark "The Reformation came into England by a side door."
5. Account for the prominence of the doctrine of the "Divine right of Kings" in the Stuart period, and show how that doctrine was transformed by the English Revolution.
6. Trace the growth of "government by the people" in England, referring to Magna Charta, Petition of Right, Bill of Rights and the Reform Bills.
7. What do you understand by the French Revolution? Account for the war between France and England which followed it.
8. Point out some of the notable advances, in care for the working-classes, which have been made during the Hanover Period.

THIRD YEAR.

RHETORIC.

CHAUCER, *Prologue to the Canterbury Tales*.

FRIDAY, APRIL 10TH :—2 TO 5 P.M.

Examiners,..... { CHAS. E. MOYSE, B.A.  
P. T. LAFLEUR, M.A.

(N.B.—Write your answers to groups A and B in separate books, and your name on the cover of each book.)

A. CHAUCER.

1. Indicate the Chaucerian pronunciation of *ou, oo, au, ow, oi, aw, ai, aw, oy, aa, ee, ey*. Give an instance of a trisyllabic foot and of a line with two extra syllables, and say precisely where both are found.

2. Make notes on the infinitive preceded by *for*; the ordinary Chaucerian infinitive; the formation of adverbs in *es, ly* and *e*; the present indicative plural; the plural of adjectives; the use of *his* for *its*, and *hem* for *them*; the prefix of the past participle; negation.

3. Give the exact Chaucerian meaning (and nothing else) of *couthe*, *esed*, *crulle*, *bawdrik*, *estatlich*, *gaused*, *stemed*, *wantounesse*, *cure*, *thing*, *vavasour*, *haunt*. Give the etymology of the words in italics, and refer each of the five to its place in the Prologue.

4. Describe the Cook and the Pardoner.

5. Write a short essay on the Prologue as reflecting contemporary life and thought; or sketch the character and extent of Chaucer's learning.

B. RHETORIC.

(N.B.—Additional marks will be given for excellence of arrangement.)

1. Rhetoric is considered as an art of *adaptation*. Explain this statement, and show how it is applied to questions of diction or choice of words in any composition.

2. Explain briefly and illustrate: Force in style, Amplification, Scenic description, Exposition by division.

3. What are the conventional divisions of the Oration? Justify the general scheme of such division, and discuss fully the nature of any one of the parts.

4. Express some opinion as to the order and arrangement of Arguments in discussion.

5. What are the two great classes into which poetical compositions are divided Discuss this division fully.

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B. A. EXAMINATION, 1896.

ENGLISH LITERATURE.

(The leading poets of the Nineteenth Century.)

FRIDAY, APRIL 10TH :—2 TO 5 P.M.

*Examiner*,.....CHAS. E. MOYSE, B.A.

N.B.—*In section A answer the first question and any two of the remainder.*

A.

1. State where the following quotations are to be found :

- (a) the organ blatant  
Holds his breath and grovels latent
- (b) I regarded myself as a Garrick revived
- (c) " Beauty is truth, truth beauty "
- (d) A heathenish damsel his light heart had won
- (e) But she, God love her ! feared to brush  
The dust from off its wings
- (f) And so I won my Genevieve
- (g) But 'twas a famous victory
- (h) the wiser mind  
Mourns less for what age takes away  
Than what it leaves behind
- (i) Earth, with her thousand voices, praises God
- (j) The love which you felt was the love of a brother
- (k) Listen, starlight, listen, listen,  
Glisten, glisten, glisten, glisten
- (l) " Look on my works, ye Mighty, and despair
- (m) That which I saw was the revealed abode  
Of Spirits in beatitude
- (n) The boat sunk down, the murderer sunk  
Beneath the avenging stream
- (o) " Holy or not, or right or wrong,  
Thy altar and its rites, I spurn "

- (p) The world's great age begins anew,  
The golden years return
- (q) . . . . . clot  
Jammed against clot, and spilt its fire  
Over all heaven
- (r) O Lady, we receive but what we give,  
And in our life alone does Nature live:  
Ours is her wedding-garment, ours her shroud !
- (s) Thus truth was multiplied on truth, the world  
Like one great garden show'd
2. Sketch the outline of *Christabel* and *Alastor*, OR *Alastor* and *Adonais*.
  3. Give an outline of *Manfred*.
  6. Give an outline of *The Princess* OR *Christmas Eve and Easter Day*.

## B.

1. Tell in few words the story of *Hart-leap Well*. From your knowledge of the *Prelude* sketch Wordsworth's school-boy life.
2. Write on the poetical characteristics of Keats.
3. Give an account of Byron's life and works, and estimate his place in literature.

## EXAMINATION FOR HONOURS IN ENGLISH AND HISTORY.

## THIRD YEAR. ^

## ANGLO-SAXON.

FRIDAY, MARCH 27TH :—2 TO 5 P.M.

*Examiner*,..... CHAS. E. MOYSE, B.A.

## 1. OHTHERE AND WULFSTAN.

*Translate* (a) Tha Finnas him thuhte.....twam dagum.

(b) Wulfstan sæde.....to Sweom.

(c) Alecgath hit.....ungefoge dyre.

*Grammar* (a) Explain the following constructions : Fela spella, hwæt thæs sothes, syfan elna, syxa sum. Give the principal parts of sædon, wæron, geseah, spræcon, for, habbath, ofsloge. Conjugate the tense of sædon and spræcon. Decline he, hwæl, dæg, sum. Explain carefully the following forms, sædon, agnum, utan, nyste, teth, micle, lengra.

(b) Decline *thes*. Parse *wære* in *sæde thæt he wære*. Parse *thæt scip wæs ealne weg yrnende under segle*.

(c) What is the meaning of *tun*? Give the verb derived from it and explain its form. Explain carefully the following forms—*aled* (*laid down*), *nyhst*, *menn*, *cymeth*.

2. THE SAXON CHRONICLE.

*Translate.* 895. Ond tha sona..... ofer sæ comon.

3. BEOWULF AND GRENDEL'S MOTHER.

*Translate* (a) Ic thæt londbuend leode naine.....roderas reotath.

(b) Ferdon forth thonon fethelastum.....

wliteseon wrætlíc weras onsawon.

*Scan the first five lines of extracts (a) and (b).*

4. THE BATTLE OF MALDON.

*Translate* (a) Wund wearth Wulfmær.....he byre hæfde.

(b) Tha wearth borda gebræc.....wæpna neotan.

5. JUDITH.

*Translate* (a) Hæfde tha gefohten .....Bethuliam.

(b) He tha lungre gefeoll.....fuglum to frofre.

6. CYNEWULF, RIDDLES.

*Translate* (a) Nu tha gerenó .....halig sylf.

(b) Ic wiht.....wihte sith.

TRANSLATION AT SIGHT.

A. *And* wit wæron ealne thone dæg on thære mæstan modes fyrhto. *And* tha se dæg wæs forthgewiten, tha gewiton wit on æfenne ut of tham eorhtscrafe (*cave*) *and* wit astigon on tha olfendan (*camel*), the uncer hlaford thider on com *and* wit unc gefyldon niowes ceses *and* wit bicoman thy teothan dæge to Rome byrig *and* wit gerehton æfter endebyrdnesse tham ealdormen bi ealre uncer fore. *And* thanon wit tha wæron far-ende to Mesopotamiam thære mægthe *and* thær wit bibohtan uncre olf. endan, *and* tha æfter thyssum ic com to tham mynstre the ic ær fram com. *And* tha wæs min abbud forthfered *and* tha gewat to tham munucum, tha the thær wæron, *and* ic hig simble lufode, swa swa swustor. *And* ic wæs swithe iung, cwæth Hieronimus, tha Malchus me this wæs segende, *and* this nu secge eow ealdum thæt ic wolde, thæt tha clænan *and* tha unwenman hira clænnyse *and* hiora unwenmyse forth gehioldan. *And* thæt hig witon, thæt bitweoh sweord *and* betwux westenne *and* betwux wildeor, thæt sio gethungennes ne mæg næfre wesan besmitan.

B. Elene mathelode *and* for eorlum spræc:

"gebyrath, higegleawe, halige rune,

word ond wisdom. Hwæt, ge witgena



lare onfengon, hu se liffruma  
 in cildes had cenned wurde,  
 mihta wealdend. Be tham Moyses sang  
 ond that *word* gecwæth, weard Israhela :  
 "eow acenned bith cniht on degle  
 mihtum mære.

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THIRD YEAR.

MILTON, SHORTER POEMS; CHAUCER, *Parlement of Foules*.

SATURDAY, APRIL 11TH:—2 TO 5 P.M.

*Examiner*, ..... CHAS. E. MOYSE, B.A.

1. Give the substance of the portion (a) of *L'Allegro*, in which Milton sets "his life to music," and (b) of *Il Penseroso*, in which Milton describes midnight pleasures. Give the meaning (and nothing else) of the following epithets, and to each attach its noun or one of its nouns: wanton, unreprieved, secure, eating, lubbar, demure, decent, virtuous, civil-suited, brown, profaner, old.

2. Show briefly that *L'Allegro* and *Il Penseroso* are not opposites but complements.

3. Write on the Masque, and use Arcades and Comus in illustration. Make notes on the following references, and say where each occurs: Yet Syrinx well might wait on her; towred Cybele; the daughters of Necessity. Quote a short passage from Arcades.

4. Show how Comus differs from the ordinary Masque.

*Spirit*. Ay me unhappy! then my fears are true.

*El. Br.* What fears, good Thyrsis? prithee briefly shew.

*Spirit*. I'll tell ye.

Give the substance of the story. What do you learn about Sabrina from *Comus*?

5. The *Parlement of Foules* is the first work of Chaucer in which the influence of Italian literature is visible. Write on this subject, and on Chaucer's general learning as displayed in the poem.

6. Give instances of humour in the *Parlement of Foules*, and say precisely where each occurs. In what stanza is the poem written?

7. Give the meaning (and nothing else) of the following words, and refer each to its place in the *Parlement of Foules*: shente, auter, couchede, emeroude, heysoge, to-slyuered, tunne, yerde. Refer each to its place in the poem.

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### THIRD YEAR.

BURKE, *Reflections*; LESLIE STEPHEN, *English Thought in the Eighteenth Century*.

SATURDAY, APRIL 18TH :—2 TO 5 P.M.

Examiners, ..... { CHAS. E. MOYSE, B.A.  
A. { C. W. COLBY, M.A., PH.D.

1. What considerations does Burke advance concerning the Revolution of 1688, and the Declaration of Right?

2. In what strain does Burke defend the French nobility?

3. "Finding no sort of principle of coherence with each other in the nature and constitution of the several new republics of France, I considered what cement the legislators had provided for them from any extraneous materials." Recapitulate what Burke has to say about "the arrangements by which they propose to hold these republics together."

4. Comment concisely upon :

- (a) M. de la Tour du Pin.
- (b) The Rev. Hugh Peters.
- (c) "Collins, and Toland, and Tindal, and Chubb, and Morgan."
- (d) Bolingbroke.

B.

1. What does Stephen say about the letters of "Junius"?

2. (a) "The sacred phrase which he habitually opposes to the rights of man is Prescription." Elaborate this statement regarding Burke.

(b) What does Stephen hold to be the higher aspect of Prescription?

3. Write upon the subversive tendencies of Godwin's philosophy.

4. Comment concisely upon :

- (a) Brown's "Estimate."
- (b) Delolme.
- (c) The "Federalist."

## THIRD YEAR.

DRYDEN, *Annus Mirabilis*, *Absalom and Achitophel*, Part I, preface to "Fables." ADDISON, *Papers on the Imagination and Paradise Lost*.

TUESDAY, APRIL 21st : — 9 TO 12 A.M.

*Examiner*,.....CHAS. E. MOYSE, B.A.

1. Name the work to which Dryden refers for (a) a defence of his stanza, (b) a description of a sea-fight in nautical terms. When speaking of poetical images, Dryden says : "a several sort of sculpture is to be used in them." Give his illustrations. State the two qualities for which Ovid is famous.

2. Give the main point of Dryden's reference to the Amazons, falling Cæsar, the Lares, the Theban walls, Varro, and state where the references occur.

3. Give an outline of the Duke Albemarle's speech at the end of the second day's battle and of the king's reference to his youth in his prayer. Describe the Loyal London.

4. How does Monmouth speak of the Duke of York, and Dryden of Buckingham's thriftlessness, Bethel's "shrieval board", Ormond's bravery and Savile's intellectual power?

Of whom are the following lines written?

Oh that my power to saving were confined!

Unknown to foreign University.

And Fortune's ice prefer to Virtue's land.

5. Briefly sketch the career of Titus Oates.

6. (a) What does Dryden say about Chaucer's verse, life and creed? (b) What poem of Chaucer does Dryden prefer? How does he criticize and justify his modernization of Chaucer? (d) State in a sentence the relation of Chaucer and Boccaccio to their mother tongues. (e) How would Ovid have treated such a theme as Arcite's death?

7. (a) Give Addison's definition of the pleasures on the imagination. State the two chief divisions of these pleasures.

(b) "We are quickly tired with looking upon Hills and Vallies." Why? With what are they contrasted?

(c) What kind of epithets are borrowed most freely by imaginative poets?

(d) What is meant by Final Causes? "One of the Final causes of our Delight, in anything that is great, may be this"—what?

(e) State without detail why our English gardens are less beautiful than those of France and Italy. What do the Chinese think of European gardening?

(f) Compare Painting and Poetical Description.

(g) State briefly: "How it comes to pass that we should take delight in being terrified or dejected by a Description."

(h) "Our imagination is confined to a very small Quantity of Space";—illustrate. Refute the fallacy that "what contains infinite quantities cannot be passed through" (Sir W. Hamilton).

8. (a) Briefly show that the three great epics hasten "into the midst of things". Give the reason.

(b) Show that Homer outshines all other poets in the variety and novelty of his characters.

(c) Show that Homer and Milton introduce burlesque.

(d) Name the modes by which the sublime is attained. Illustrate from Milton.

(e) Why does Addison think Milton's Invocation appropriate? The shrinking of the Spirits; state Milton's Refinement.

(f) Give the chief features of Mammon's character.

(g) What is Addison's opinion regarding Milton's directing Satan's flight to the sun? of Uriel gliding to the earth on a sunbeam? of Satan's speech to the sun? of the eclipse of the sun? of Raphael's behaviour in Paradise?

(h) The tearing up of the mountains. Compare classical descriptions with Milton's.

(i) The temptation of Dido and Eve: In what way parallel? What moral does Addison draw from Paradise Lost?

MILTON, *Areopagitica*;—SYDNEY, *Apologie for Poetrie*.

THURSDAY, APRIL 23RD, 1896:—9 TO 12 A.M.

1. Sketch the state of England at the time *Areopagitica* was written, and also the subsequent history of licensing.

2. Criticize the style of *Areopagitica*.

3. State the main points of Milton's treatment of the following questions:—

- (a) True virtue does not consist in ignorance of vice.  
(b) Licensing cannot be confined to Literature.  
(c) Freedom of the press promotes ecclesiastical activity.  
(d) Licensing in Europe is a warning to England.

4. Make explanatory notes on Dion Prusæus, the libertine school of Cyrene, Cynick impudence, the west end of Paul's, Sorbonists, Verres Loretto, a topic folio, a Harmony, a Catena.

1. Write a short essay on Sidney's knowledge of Greek literature as revealed in the *Apologie for Poetrie*.

2. Follow Sidney through his comments on the various species of poetry.

3. What has Sidney to say about :

- (a) Diction in poetry;  
(b) The two kinds of versifying?

4. Make brief notes on: Mysomousoi; Troylus and Cresseid; Julius Scaliger; Utopia; "John a stile and John a noakes."



EXAMINATION FOR HONOURS IN ENGLISH AND  
HISTORY.

## THIRD YEAR.

WORDSWORTH, *Prelude*; SPENSER, *Faerie Queene*, Bk. I.

WEDNESDAY, APRIL 22ND, 1896 :—9 TO 12 A.M.

*Examiner*,..... CHAS. E. MOYSE, B.A.

1. Describe, with brief but pointed references to localities, Wordsworth's school-life at Hawkshead, and the impression which Nature made on him at that time.

2. Give the outline of Wordsworth's treatment of the following :

(a) Pulpit oratory in London.

(b) "I learnt to dream of Sicily."

(c) There are in our existence spots of time.

That with distinct pre-eminence retain.

A renovating virtue, whence.....

..... our minds.

Are nourished and invisibly repaired.

(d) ..... individual sights.

Of courage or integrity or truth.

Or tenderness..... One will I select.

(e) The contrast between shepherd life in ancient time and shepherd life in the Lake District.

3. Show by means of a single statement in what way or for what reason each of the following is introduced into the *Prelude*: Bucer, the planet Jupiter, Jack the Giant Killer, Sidney's Arcadia, the summit of Mont Blanc, Yordas, Timoleon, "The Wealth of Nations," the Quantocks, Utopia.

4. How are Ariosto, Xenophon, Acrasia, Busirane, spoken of in the letter to Raleigh?

5. How does Spenser describe

(a) The infernal regions,

(b) Avarice,

(c) Fidelia,

(d) The Dragon.

State the offices of the bead-men of the hospital.

6. Trace Duessa throughout the first book.

7. Give the meaning (and nothing else) of the following words: agraste, baine, bewaile, essayne, incontinent, owch, stye, teene, warrayd, yfere.

## EARLY ENGLISH.

## THIRD YEAR.

FRIDAY APRIL 24TH:—2 TO 5 P.M.

*Examiner*,..... CHAS. E. MOYSE, B.A.

Translate:—

(a) The Normans were aboue the hul · the othere vpward come,  
 & bi-turnde hom aboue al eseliche · as it wolde be donward,  
 & the othere binethe ne mizte nozt · so quicliche vpward,  
 & hii were biuore al tosprad · that me mizte bitwene hom wende.  
 The Normans were tho wel porneid · aboute in eche ende,  
 & stones adonward slonge · vpe hom ynowe,  
 & mid speres & mid flon · vaste of hom slowe,  
 & mid suerd & mid ax · uor hii that vpward nome  
 Ne mizte no wille abbe of dunt · as hii that donward come,  
 & hor vantwarde was to-broke : that me mizte withinne hom wende,  
 So that the Normans uaste · slowe in ech ende  
 Of the Englisse, al uor nozt · that the valeie was nei  
 As heie ifuld mid dede men · as the doune an-hei.  
 The ssetare donward al uor nozt · vaste slowe to gronde,  
 So that Harold thoru then eie · issote was dethes wounde.

(b) With hali halgh bes of the;  
 With man vnderand, vnderand be.  
 With chosen, and be chosen thou sal;  
 With il-torned, and il-tornest al.

(c) And I sal gnide [tham] als dust bi-for winde likam;  
 Als fen of gates owai do tham.  
 Outtake fra ogainsaghes of folk thou sal;  
 In heued of genge me set with al.  
 Folk whilk I ne knewe serued to me;  
 In hering of ere me boghed he.  
 Outen sones to me lighed thai  
 Outen sones elded er thai;  
 And thai halted thare thai yhode  
 Fra thine sties that ere gode.

(d) BLISSE, mi saule, Lauerd non;  
 Lauerd, mi God, swith mikel ertou.  
 Schrift and fairehed schred thou right;  
 Vmlapped als klething with light,  
 Strekand heuen als fel with blis;

That hiles with watres ouerestes his;  
 That settes thin vpsteghing kloude,  
 That gaas ouer fetheres of wyndes loude;  
 That makes thine aungels gastes flighand,  
 And thin hine fire brinnand;  
 That groundes land ouer stathelnes his,  
 Noght helde sal in werld of werld this.  
 Depnes als schroude his hiling alle,  
 Ouer hilles his watres stand salle.  
 Fra thi snibbing sal thai fle,  
 For steuen of thi thoner fered be;  
 Vpsteghes hilles and feldes doungeas,  
 In stede whilk thou grounded to thas.  
 Mere set thou whilk ouerga thai ne sal,  
 Ne turne to hile the land with-al.  
 'That outsendes welles in dales ma,  
 Bitwix mid hilles sal watres ga.

(e)

Hit is mony gedelyng,  
 When me him zeueth a lutel thyng,  
 Waxen wol vn-saht.  
 Hy telle he deth wel by me,  
 That me zeueth a lutel fe,  
 Ant oweth me riht naht.  
 'That me lutel zeueth, he my lyf ys on;'  
 Quoth Hendyng.  
 Mon that is luef don ylle,  
 When the world goth after is wille,  
 Sore may him drede;  
 For zef hit tyde so that he falle,  
 Men shal of is owen galle  
 Shenchen him at nede.  
 'The bet the be, the bet the byse;'  
 Quoth Hendyng.

(f)

Huere hure a nyht hue nome,  
 He that furst ant last come,  
 A peny brod & bryht;  
 This other swore alle & some,  
 That er were come with lome,  
 That so nes hit nout ryht;  
 Ant swore somme vnsaht,  
 That hem wes werk by-taht  
 Longe er hit were lyht;  
 For ryht were that me raht  
 The mon that al day wraht  
 The more mede a nyht

(g)

Ac water is kendeliche cheld,  
 Thaz hit be warmd of fere;  
 Ther-fore me mey cristni ther-inne,  
 In whaut time falthe a zere

Of yse;

So mey me nauzt in ewe ardaunt,  
 That neth no wateris wyse.

Ac he that zif so large water  
 The fend fram ous te reaue,  
 In nede for to cristny men,  
 Zef alle men ileaue

At felle;

Olepi me mot hym depe ine the water,  
 And eke the wordes telle.

(h) Strengthe zayth. 'Wythstondeth hym: stronge ine byleaue. Byeth gledi ine god. Clotheth you mid godes armes. the hauberk of ryzt. thane sseld of beleaue. nymeth thane helu of belthe. and the holy gostes zuord: thet is godes word.' Ryz[t]nesse zayth. 'Lybbewesobreliche. ry[z]tuollyche an bonayrelyche. Sobrelyche: ine ous zelue. ryztuollyche: to oure emcristen. bonayrelyche: to god. thet we nolleth thet me do to ous zelue: ne do we hyt nazt to othren. and thet we wyllleth thet me do to ous zellue: do we hit to othre men. and uor zothe thet is ryzt.' Slezthe zayth. 'Ther is another wyth-oute the gates uayr. and gled. hit thingth the[t] he bre[n]gth glednesse.' Ryz[t]nesse zayth. 'underuongeth hym. be cas he ous ssel gledye. uor thes ilke uerste: gratlyche he ous heth y-mad of-dret.' Slezthe zayth to the messagere. 'Guo in. and huo thou art. and huannes thou comst. and huet thou best yzoze: zay ous.' The messagyr zayth. 'Ich am loue of lyue eurelestynde. an wynynge of the contraye of heuene. Yef ye me wyllleth y-here: habbeth amang you. clom and reste. Nazt uor zothe amang gredynges and noyses: ych ne may by yherd.' Riz[t]uolnesse zayth. 'Yef we longe godes drede and be-thenchinge of dyathe were stille: ryzt hit is thet the spekinde wel more we by stille.' Wylningge of the lyue wyth-oute ende zayth. 'Theruore byeth stille and yhereth myd wylle. Ich come uram heuene. and theliche thinges ich yzez ther. thet no man ne may dyngneliche zigge. Thazles zomthyng ich wylle zigge: ase ich may. Ich yzez god. ac be ane sseawere ine ssede.

Hyre holynesse and hyre blysse: long time ich me lykede. Ich yzez to the blyssede heape of *confessours*. amang huam men apostles and techeres thet holy cherche mid hare techinge wereden. and alsuo uram alle heresy wy[th]-oute wem habbeth yclenzed: sseaweth. and hy uele habbeth ytazt. sayneth ase sterren ine eurelestynde wy[th]-oute ende. Ther byeth Monekes thet uor claustres and uor straye cellen. wel moche an clyerer

thanne the zonne: habbeth wonyinges. Vor blake and uor harde kertles  
 huyter thane the snaw. and of alle zofthede and nesshede clothinge habbeth  
 an. Vram hare ezen god wypethalle tyeres. and thane kyng hyssolle ysy  
 ine hys uayrhede. Alast to the uelazrede of maydynes ich lokede. of  
 huychen blysse ssepthe agraythinge and melodya. huyche none mannes  
 speche. dingnelyche may telle. And hy zonge thane zang: thet non other  
 ne may zyng. Ac and the zuete smel ine hare regyon zuo zuete ys: thet  
 alle manyre zuete smelles ouercomth. And to hare benes: oure lhord  
 arist. to alle othren: zittinde he lhest.' Slezthe zayth. 'Hyt lyketh thet  
 thou zayst. At uor of: chen of the holy ordres wohdres thou best y-zed:  
 we byddeth thet thou zigge ons huet is hare dede in mennesse and huet is  
 the *conuers*[ac]tion of uelazrede: zay ous.' The wylny[n]gge of the lyue  
 wyth oute ende zayth. 'Vor zothe ich wylle zygge. The dede of alle ine  
 mennesse yz zeueuald. Hy lybbeth. hy smacketh. hy louyeth. hy byeth  
 glede. hy heryeth. hy byeth zuyfte. hy byeth zikere.' Slezthe zayth.  
 'Thaz ich zomdel this onderstonde: uor ham thet lhesteth of eben zay.'

EXAMINATION FOR B.A. HONOURS IN ENGLISH AND HISTORY,  
 1896.

TENNYSON: *In Memoriam*.

THURSDAY, APRIL 9TH:—9 TO 12 A.M.

*Examiner*,..... CHAS. E. MOYSE, B.A.

1. Mention the various kinds of chronological landmarks in *In Memoriam*, and give the substance of the first section of each kind.

2. State briefly how the sections in which the following lines occur bear on the development of the poem:

- (a) The prophet blazoned on the panes
- (b) She takes a riband or a rose.
- (c) I think once more he seems to die
- (d) I felt the thews of Anakim
- (e) If any calm, a calm despair
- (f) The pillar of a people's hope
- (g) Or sorrow such a changeling be?
- (h) She cries, "A thousand types are gone."
- (i) And Fancy light from Fancy caught
- (j) Are God and Nature then at strife?
- (k) The captive void of noble rage
- (l) And learns the use of "I" and "me."



(m) Her hands are quicker unto good.

(n) So that still garden of the souls

(o) To thee too comes the golden hour

3. Show from *In Memoriam* that Tennyson is, in essentials, the poetical son of Wordsworth.

4. What resemblances do you find between *Locksley Hall*, *The Two Voices* and *In Memoriam*, and between *In Memoriam* and *Christmas Eve and Easter Day*.

5. (a) The epilogue has been criticized as an excrescence. Show that it is not.

(b) Display the allegory of Section CIII—"Methought I dwelt within a hall."

6. Construct a biography of Arthur Henry Hallam from *In Memoriam*.

#### EXAMINATION FOR B. A. HONOURS IN ENGLISH AND HISTORY.

Shakspeare : *Love's Labour's Lost* ; *A Midsummer Night's Dream* ; *Hamlet*.

MONDAY, APRIL 13TH, 1896 :—9 TO 12 A.M.

*Examiner*, ..... CHAS. E. MOYSE, B.A.

1. Write on Euphuism and Shakspeare's use of it.
2. Examine the structure of L.L.L.
3. Display the inner meaning of the *Dream*.
4. Sketch Hamlet's character, and show that the construction of the play is in strict harmony with it.
5. Take an important scene from each play, and give its substance.

#### EXAMINATION FOR B.A. HONOURS IN ENGLISH AND HISTORY

##### BEOWULF.

WEDNESDAY, APRIL 14TH, 1896 :—MORNING, 9 TO 12.

*Examiner*, ..... CHAS. E. MOYSE, B.A.

1. Translate —

- (a) Fyrst forth gewat :      flota wæs on ythum,  
      bat under beorge.      Beornas gearwe  
      on stefn stigon ;      streamas wundon  
      sund with sande ;      seccas bæron

on bearm nacan      beorhte frætwe,  
 guth-searo geatolic ;      guman ut scufon,  
 weras on wil-sith      wudu bundenne.  
 Gewat tha ofer wæg-holm      winde gefysed  
 flota famig-beals      fugle gelicost,  
 oth thæt ymb an-tid      othres dogores  
 wunden-stefna      gewaden hæfde,  
 thæt tha lithende      land gesawon,  
 brim-clifu blican,      beorgas steape,  
 side sæ-næssas :      tha wæs sund liden,  
 eoletes æt ende.      Thanon up hrathe  
 Wedera leode      on wang stigon,  
 sæ-wudu sældon      (syrca hrysedon,  
 guth-gewædo) ;      gode thancedon,  
 thæs the him yth-lade      eathe wurdon.  
 Tha of wealle geseah      weard Scildinga,  
 se the holm-clifu      healdan scolde,  
 heran ofer bolcan      beorhte randas,  
 fyrd-searu fuslicu,      hine fyrwyrt bræc  
 mod-gehygdum,      hwæt tha men wæron.  
 Gewat him tha to warothe      wiege ridan  
 thegn Hrothgares,      thrymmum cwehte  
 mægen-wudu mundum,      methel-wordum frægn :

(b)

" Git on wæteres æht  
 " seofon niht swuncon ;      he the æt sunde oferflot,  
 " hæfde mare mægen.      Tha hine on morgen-tid  
 " on Heatho-ræmas      holm up atbær  
 " thonon he gesohte      swæsne ethel  
 " leof his leodum      lond Brondinga,  
 " freotho-burh fægere,      thær he folc ahte,  
 " burg and beagas.      Beot eal with the  
 " sunu Beanstanes      sothe gelæste.  
 " Thonne wene ic to the      wyrsan gethinges  
 " theah thu hea tho-ræsa      gehwær dohte  
 " grimre guthe,      gif thu Grendles dearest  
 " niht-longne fyrst      nean bidan !"  
 Beowulf mathelode,      bearn Ecgtheowes :  
 " Hwæt thu worn fela,      wine min Hunferth,  
 " beore druncen      ymb Breca spræce,  
 " sægdest from his sithe !      Soth ic talige,  
 " thæt ic mere-strengo      maran ahte,  
 " eafetho on ythum,      thonne ænig other man.  
 " Wit thæt gecwædon      cniht-wesende  
 " and gebeotedon      (wæron begen tha git

"on geogoth-feore)    thæt wit on gar-secg ut  
 "aldrum nethdon;    and thæt geæfndon swa.  
 "Hæfdon swurd nacod,    tha wit on sund reon,  
 "heard on handa,    wit unc with bron-fixas  
 "werian thohton.    No he wiht fram me  
 "flod-ythum feor    fleotan meahte,  
 "hrathor on holme,    no ic fram him wolde.  
 "Tha wit ætsomne    on sæ wæron  
 "fif nihta fyrst,    oth that unc flod todraf,  
 "wado weallende,    wedera cealdost,  
 "nipende niht    and northan wind,  
 "heatho-grim andhwearf;    hreo wæron ytha.  
 "Wæs mere-fixa    mod onhrered:  
 "thær me with lathum    lic-syrce min,  
 "heard hond-locen,    helpe gefremede;  
 "beado-hrægl broden    on breostum læg,  
 "golde gegyrwed.    Me to grunde teah  
 "fah feond-scatha,    fæste hæfde  
 "grim on grape:    hwæthre me gyfethe wearth,  
 "thæt ic aglæcan    orde gerahte,  
 "bilde-bille;    heatho-ræs fornam  
 "mihtig mere-deor    thurh mine hand.

(c)

Thæt wæs gecor sith,  
 thæt se hearm-scatha    to Heorute ateah:  
 dryht-sele dynede,    Denum eallum wearth,  
 ceaster-buendum,    cenra gehwylcum,  
 eorlum ealu-scerwen.    Yrre wæron begen,  
 rethe ren-weardas.    Reced hlynsode;  
 tha wæs wundor micel,    thæt se win-sele  
 withhæfde heatho-deorum,    thæt he on hrusan ne feol.  
 fæger fold-bold;    ac he thæs fæste wæs  
 innan and utan    iren-bendum  
 searo-thoncum besmithod.    Thær fram sylle abeag  
 medu-benc monig    mine gefræge,  
 golde geregnad,    thær tha graman wunnon:  
 thæs ne wendon ær    witan Scyldinga,  
 thæt hit a mid gemete    manna ænig  
 betlic and ban-fag    tobrecan meahte,  
 listum toluacan,    nymthe liges fathm  
 swulge on swathule.    Sweg up astag  
 niwe geneahhe;    North-Denum stod  
 atelic egesa    anra gehwylcum  
 thara the of wealle    wop gehyrdon,  
 gryre-leoth galan    godes andsacan,

sige-leasne sang,      sar wanigean  
 helle hæftan.      Heold hine to fæsté  
 se the manna was      mægene strængest  
 on tham dæge      thysses lifes.

2. Translate and make notes on the following :—Seyld Scefing ; egsode eorl ; Scedelandum in ; longe thrage ; healsgebedde ; thæt se ecghete ath-umswerian.....wæcnan scolde ; wiht unhælo ;

                                 hetenithas wæg  
 fyrene and fæhthe fela missera  
 singale sæce.

feo thingian ; helrunan hwyrtum scrithath ; æt bærgtrafum ; strengest ; ythlida ; winde gefysed ; thrymmum cwehte ; maga gemedu ; wes thu us larena god ! stig wisode gumum ; huru se aldor deah ; scencte scir wered ; git on sund reon ; swa hit gedefe wæs ; his mod ahlog ; mine gefræge ;

                                 heorodreore weol,

deathfæge deog.

#### TRANSLATION AT SIGHT.

Tha wæs gesyne, thæt sige forgeaf  
 Constantino cyning ælmihtig  
 æt tham dægweorce, domweorthunga  
 rice under roderum thurh his rode treo.  
 Gewat tha heriga helm ham eft thanon,  
 huthe hremig (hild wæs gesceaden),  
 wigge geweorthod. Com tha wigena hleo  
 thegna threate thrythbord stenan (*vob. umlant of stan*),  
 beadurof cyning burga neosan,  
 Heht tha wigena weard tha wisestan  
 snude to sionothe (*assembly*), tha the snýttro cræft  
 thurh fyrngewrito gefrigen hæfdon,  
 heoldon higethancum hæletha rædas.  
 Tha thæs fricggan ongan folces aldor,  
 sigerof cyning ofer sid weorod :  
 wære thæt ænig yldra oththe gingra  
 the him to sothe secggan meahte,  
 galdrum (*incantation*) cythan, hwæt se god wære,  
 "boldes (*house*) brytta, the this his beacen wæs,  
 the me swa leoht othwyde ond mine leode generede,  
 tacna torhtost, ond me tir forgeaf,  
 wigsped with wratham thurh thæt wlitige treo ? "

CYNEWULF, *Elene*.

## XLI.

*Be gereordes tidum.*

Fram tham halgan eastum oth pentecosten eten gebrothru on twa mæl thæt is ærest on thære syxtan tide and eft on æfen. Fram pentecosten ouer ealne sumar fæstan twegen dagas on thære wucan, thæt is on wodnesdæg and frigedæg, butan hy ouermicel geswinc habben, oththe swithlic hæte thæs sumeres derige; othrum dagum etan on twa mæl, thæt is to middægæs and eft on æuen. Gif hy ut an æcere wure habben, oththe thæs sumer es welm to swithlic bith, thæs middægæs gereord is singallice to anlætenne, thæt thonne sy on thæs abbodes foresceawunge. He ealle thing swa gemetegige and gefadige (*dispose*), thæt buru tha sawla gehealdene syn, and thæt thæt gebrothru wyrren, wyrren thæt butan ceorunge. Fram idus septembris oth lenctenes anginne hy on an mæl to nones gereorden. Ouer callencten oth eastan hy oth æfen fæsten. And se æfen swa sy gefadod, thæt hy candellicohtes æt tham gereorde ne behofien, ac eallu thing be dægæs leohte gefyllede syn. On ælcne timan swa sy gefadod, swathær hit sy, swa an mæl swa twa, thæt eallu thing be dægæs leohte gefadode syn.

*ÆTHELWOLD, Benedictine Rule.*


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EXAMINATIONS FOR B.A. HONOURS IN ENGLISH AND HISTORY.

MILTON, *Lycidas*; SHELLEY, *Adonais*; CAMPBELL, *Pleasures of Hope*.

THURSDAY, APRIL 16TH, 1896 :—9 TO 12 A.M.

*Examiner*,..... CHAS. E. MOYSE, B.A.

1. Write an essay of not more than two pages on the poetical quality of *Lycidas*.

2. Explain the following phrases and references, and complete the line in which each stands: build the lofty rhyme; her sultry horn; old Damocetas; her wisard stream; as others use; th'abhorred shears; crown'd with vocal reeds; sage Hippo tades; that sanguine flower; Blind mouths; pensive head; Doric lay.

3. Examine the construction of *Adonais*.

4. In what way does Shelley speak of Morning, the eagle, the Pilgrim of Eternity, Chatterton,

Go thou to Rome,—at once the Paradise—

Give the substance of the two stanzas in which Shelley describes the last resting-place of Keats.



5. State in your own words how and in what connection reference is made by Campbell to Elijah, Chiloe, Prague, Congo, Amelia, Iona, Absalom, Alonzo.

6. (a) Lo! at the couch where infant beauty sleeps....

(b) Or learn the fate that bleeding thousands bore,  
March'd by their Charles....

Complete the pictures, OR select and sketch two others (one from each part of the poem) with which you have been particularly impressed.

7. Write, without lengthy quotations, an essay on the poetry of Campbell.

## B.A. HONOUR EXAMINATION IN ENGLISH AND HISTORY.

### MÆSO-GOTHIC AND EARLY ENGLISH.

MONDAY APRIL 20TH, 1896:—9 TO 12 A.M.

Examiner,.....CHAS. E. MOYSE, B.A.

1. (a) Jah *galithun* in Kafarnaum; jah suns sabbato daga *galeithands* in synagogen *laisida* ins. Jah usfilmans *waurthun* ana thizai *laiseinai* is; unte was *laisjands* ins swe *waldufni* habands jah ni swaswe thai *bokarjos*. Jah was in thizai synagogen ize manna in unbrainjamma ahmin, jah *ufhropida*, Kwithands: fralet, hwa uns jah thus Iesu Nazorenai, kwamt frakwistjan uns? Kann thuk hwas thu is, sa weiha guths.

(b) Jah *gahausjands* Iesus kwath du im: ni thaurbun *swinthai lekeis*, ak thai ubilaba habandans; ni kwam lathon *uswaurhtaus*, ak *frawaurh* tans.

(c) Jah is kwath du im: niu *ussugzwuth* aiw hwa *gatawida* Daweid than thaurfta jah *gredags* was, is jah thai *mith imma*? Hwaiwa *galaith* in *gard* guths uf Abiathara *gudjin* jah *hlaiþans* faurlegeinai *matida*, thanzei ni skuld ist *matjan* nib *ainaim* *gudjam*, jah gaf jah thaim *mith sis* *wisandam*?

2. Parse the Teutonic nouns in extract (a); also the verbs and pronouns.

3. Change the words italicized, step by step, into their A. S. equivalents

1. Translate:

(a) & whanne this witty werwolf      wiste him so schaped,  
He knew it was bi the craft      of his kursed stepmoder,

& thouzt or he went away he wold, zif he mist,  
 Wayte hire sum wicked torn what bitidde after.  
 & as blue, boutte bod he braydes to the quene,  
 & hent hire so betterly to haue hire a-strangeled,  
 That hire deth was neiz ditz to deme the sothe.

- (b) "now telle me, felawe, be thi feizth for no thing ne wonde,  
 sei thou euer themperour so the crist help?"  
 "nay, sire, bi crist," quath the couherde "that king is of heuen,  
 I nas neuer zet so hardi to nez him so hende  
 there i schuld haue him seie so me wel tyme."
- (c) The makez of thy myry sunez; this meyny of azte  
 I schal saue of monnez saulez & swelt those other.
- (d) "Recouerer of the creator" thay cryed vchone,  
 That amounted the mase; his mercy watz passed,  
 & alle his pyté departed fro peple that he hated.  
 Bi that the fiod to her fete flozed & waxed,  
 Then vche a segge sez wel that synk hym byhoued;  
 Frendes fellen in-fere & fathmed togeder,  
 To dryz her delful deystyné & dyzen alle samen;  
 Luf lokez to luf & his leue takez,  
 For to ende alle at onez for euer twynne.
- (e) Bot the burne bynne borde that bod to hys come,  
 Banned hym ful bytterly
- (f) Bot quen hit is brused, other broken other byten in twynne,  
 No worldez goud hit withinne bot wydowande askes.

2. What does Mandeville say about the Jews?

3. Translate:

(a) Liztliche Lyzere leop a-wey thennes,  
 Lurkede thorw lones to-logged of Monye;  
 He nas nouzwher wel-come for his mony tales,  
 Bote our al I-hunted and hote to trusse.

(b) Barouns and Burgeis heo bringeth to serwe,  
 Heo Buggeth with heore Iuweles; vr Iustises heo schendeth.  
 Heo lihth azeyn the lawe and letteth so faste,  
 That Feith may not ban his forth hir Florins gon so thikke,  
 Heo ledeth the lawe as hire luste & loue dayes maketh,  
 The Mase for a Mene mon thauz he mote euere.

(c) Bote he beo heihliche I-huret elles wol he chide,  
 That he was werkmon I-wrouzt warie the tyme,  
 And Corse zerne the kyng and al his Counseil aftur,  
 Suche lawes to loke laborers to chaste.



similes ? (c) What plays of Shakspeare are referred to, in what way and where ?

3. Say where and in what connection the following extracts are found :

- (a) Sure 'tis some blazing Comet.
- (b) Faith, Sir, by the Rule of Romance.
- (c) There's a bob for the Court.
- (d) I make the horror of his guilt confound his intellects.
- (e) *Lardella* lives.
- (f) Oh, you just Gods, rob me not of a Father.
- (g) We find more shape, more beauty in a Fly.
- (h) Go on, cries Honour ; tender Love says, nay.
- (i) A great huge Hang-man.
- (j) BAYES. O ye Gods.

PHYS. There's a smart expression of a passion.

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#### EXAMINATION FOR B.A. HONOURS IN ENGLISH AND HISTORY.

POPE, *Essay on Criticism, Essay on Man.*

THURSDAY, APRIL 23RD, 1896 : —2 TO 5, P.M.

*Examiner*,.....CHAS. E. MOYSE, B.A.

1. Write an essay of not more than two pages in length on the poetry of Pope.

2. Give in your own words the essential points of Pope's answers to the following questions :—

- (a) Does judgment produce good criticism ?
- (b) What help does art give to criticism ?
- (c) Is it justifiable to violate rules ?
- (d) Why should a critic avoid fixing his attention on parts ?
- (e) What was the tone of the reigns of Charles II. and William III.
- (f) What are the marks of unlearned partiality ?

3. Give an outline of the portion of the *Essay on Criticism* which speaks of the "Morals Critics ought to show" and of the classes on which the exercise of such morals would be thrown away.

4. Whom does Pope mention as exemplars of common sense, accuracy, imagination and criticism combined, scholarship together with courtly ease? In illustration of what general statements does Pope introduce the sun, the Alps, a picture?

5. How does Pope refute such statements as the following :

- (a) Man should have been physically endowed otherwise than he is.
- (b) Man's limited knowledge makes him miserable.
- (c) Man's happiness is the Final Cause of the creation.
- (d) Science yields much.
- (e) Self-love and reason have in themselves a moral quality.
- (f) Passions are vices.
- (g) Real vice does not exist.
- (h) The happiness of the brute creation like that of mankind depends

on reason.

- (i) Equality produces happiness.
- (j) Happiness lies in externals.
- (k) Superior mental parts always produce happiness.

6. Mention some of Pope's borrowings from Bolingbroke.

# EXAMINATION FOR B.A. HONOURS IN ENGLISH AND HISTORY.

BROWNING, *Christmas-Eve and Easter-Day*; —TENNYSON, *Coming of Arthur*,  
*Gareth and Lynette*, *Holy Grail*, *Passing of Arthur*.

SATURDAY, APRIL 25TH, 1896 : 9 TO 12 A.M.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Avoiding the details of incidents, display, step by step, the inner meaning of Browning's poem.

2. Show that essential beliefs expressed in *Christmas-Eve and Easter-Day* are found in Browning's longer poems.

3. To what features of Browning's poetry is his power due? Illustrate from *Christmas-Eve and Easter-Day*.

4. (a) What does the word *Idyll* mean, and in what sense may it be applied to Tennyson's poems? (b) State in few words the general spiritual intention of the *Idylls*.

5. Explain the distinctly allegorical portions of the poems you have been studying.

6. Present the *Idylls* as one poem in an essay of not more than three pages in length.



THIRD AND FOURTH YEAR HONOURS IN ENGLISH AND  
HISTORY.

LECTURES ON THE HISTORY OF DEMOCRACY PRIOR TO THE  
FRENCH REVOLUTION.—FIRST HALF.

THURSDAY, APRIL 2ND, 1896 :—MORNING, 9 TO 12.

*Examiner*,.....CHARLES W. COLBY, M.A., PH.D.

1. What changes in the constitution of Athens were made during the political ascendancy of Cleisthenes?

2. What was the status at Athens, under the fully developed democracy of:

(a) Slaves ;

(b) Metics.

3. Indicate the nature of the difficulties with which Demosthenes had to contend in his attempt to regenerate the public spirit of Athens, dwelling particularly upon that part of his career which immediately precedes the battle of Chæroneæ.

4. Mention, with brief comment on each, the chief constitutional landmarks in the struggle for equalization of the orders at Rome.

5. What were the most glaring political and economic evils of the Roman State in the time of Tiberius Gracchus?

6. Under what circumstances was the Sempronian Law passed and carried out?

7. Make brief notes on : *Seisachtheia* ; *psephism* ; *Diaetetae* ; *jus auxilii* ; *us imaginum*.

THIRD AND FOURTH YEAR HONOURS IN ENGLISH AND  
HISTORY.

LECTURES ON THE HISTORY OF DEMOCRACY PRIOR TO THE  
FRENCH REVOLUTION.—SECOND HALF.

SATURDAY, APRIL 4TH, 1896 :—MORNING, 9 TO 12.

1. What were the main institutional contributions of the Germans to European civilization?

2. What part did the *præcarium* and *patrocinium* have in the development of Feudalism?

3. Trace the vicissitudes of the Commune of Laon.

4. Examine the terms of any three charters granted to towns of northern France between 1080 and 1130.

5. Describe the political condition of Florence in 1378, and follow out in detail the various riots and risings of that year.

6. (a) Discuss the constitutional history of Uri, Schwyz, and Unterwalden in relation to Hapsburg power before the death of the Emperor Rudolf I. So far as possible treat each land separately.

(b) Mention the most important terms of the League of 1291, and note such changes as were introduced by the League of Brunnen.

7. Make brief notes on: Amiens and Corbie; Adela de Vermandois; *affiliation* of towns; Farinata degli Uberti; the Florin of 1252; castato Zaeringhen; Muri; Urbarbuch; Einsiedeln.

### INTERMEDIATE EXAMINATIONS.

LECTURES ON THE POLITICAL HISTORY OF EUROPE, 1789-1878.

FRIDAY, APRIL 10TH:—AFTERNOON, 2 TO 5.

*Examiner*,.....CHARLES W. COLBY, M.A., PH.D.

1. Give a sketch of French constitutional history and party politics, from the meeting of the States General to the establishment of the Directory.

2. Illustrate the greatness of Napoleon by reference to his government of France.

3. Write an essay on 1848 as an *Annus Mirabilis* in European politics.

4. Examine the career of Napoleon III in its relation to Italian affairs.

5. Follow the thread of Prussian power and influence through German history, from the battle of Jena to January 18th, 1871.

6. Write concisely upon the following subjects

(a) The Armed Neutrality ;

(b) Mehemet Ali;

(c) The Municipal Corporations Act, 1835.

7. Make brief notes on: Turgot; Arthur Young; League of Pillnitz; Preliminaries of Loeben; Peace of Pressburg; William Cobbett; Clare Election; Guizot in foreign politics; Nullification Savoy.

THIRD AND FOURTH YEAR HONOURS IN ENGLISH AND  
MODERN LANGUAGES.

LECTURES ON THE HISTORY OF THE REFORMATION.—FIRST  
HALF.

SATURDAY, MARCH 28TH:—AFTERNOON, 2 to 5.

*Examiner*,.....CHARLES W. COLBY, M.A., PH.D.

1. Defend the following thesis: *The Reformation ought not to be regarded in isolation, but rather as part of a general movement which extends from the Renaissance to the French Revolution*

2. Write a short essay on Luther.

3. Discuss Erasmus in his character of reformer, and emphasize his attitude towards the Lutheran schism.

4. Indicate the nature of the theological views of:

(a) Zwingli;

(b) Calvin.

5. Treat briefly the following types of radicalism in the Reformation :

(a) Anabaptist;

(b) Socinian.

6. Touch upon : (a) *Biblical* Reformers before Luther ; (b) Demands of the Swabian peasants in 1525 ; (c) Ulrich von Hutten.

7. Mention significant points concerning : Staupitz ; League of Torgau ; Diet of Speyer, 1529 ; Peace of Nuremberg ; Treaty of Friedewald.

THIRD AND FOURTH YEAR HONOURS IN ENGLISH AND  
MODERN LANGUAGES.

LECTURES ON THE HISTORY OF THE REFORMATION.—SECOND  
HALF.

TUESDAY, MARCH 31ST:—MORNING, 9 to 12.

*Examiner*,.....CHARLES W. COLBY, M.A., PH.D.

1. Between 1555 and 1618 the progress of the Protestant Revolution was distinctly checked by a revival of activity within the Roman Church. This revival of activity resulted in a European movement which is sometimes called the Catholic Reaction and sometimes the Counter Reformation. Show how each name has its measure of truth.

2. What business did the Council of Trent transact during the sessions of its first period?
  3. Indicate the nature of the intellectual position held by :
    - (a) Servetus ;
    - (b) Castellio.
  4. Trace the connection of Catherine de Medici with the religious politics of France.
  5. Write an account of Swedish influence in the Thirty Years War.
  6. Touch upon :
    - (a) The rivalry of Charles V. and Francis I.
    - (b) Paolo Sarpi's work as champion of Venice.
  7. Mention significant points concerning : Don Carlos, Peace of Alais, Donauwörth, Rocroy, Chemnitz.
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EXAMINATION FOR THE NEW SHAKESPERE SOCIETY'S  
PRIZE.

HAMLET.

1. Contrast the characters of Laertes and Hamlet.
2. What is your opinion regarding Hamlet's madness, and why do you hold it?
3. Select passages from the play which contain rare words or present difficult constructions. Explain each, and say where it occurs.

OTHELLO.

1. Give an outline of the views of Dowden and Gervinus concerning the play.
2. Give the substance of an important scene of your choice.

MACBETH.

1. Compare (a) Ancient Classical tragedy with Macbeth ; (b) pre-Shakspereian tragedy with Macbeth.
2. Write on the source of Macbeth. State in tabular form the chief events of the play and say where each happens.
3. Use Macbeth in illustration of the dramatic art of Shakespere.

KING LEAR.

1. How would you support the statement that King Lear is Shakespeare's greatest dramatic effort?
2. Notice objections that have been made to the construction of the play, and discuss them.
3. Give some specimens of the Southern Dialect.
4. Write on Shakespeare's blank verse and Shakespeare's English, drawing your illustrations from Macbeth, Othello and King Lear.

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MENTAL AND MORAL PHILOSOPHY.

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INTERMEDIATE EXAMINATIONS.

LOGIC.

THURSDAY, APRIL 16TH :—MORNING, 9 to 12.

Examiners,..... { J. CLARK MURRAY, LL.D.  
P. T. LAFLEUR, M.A.

(N B.—Question 8 must be attempted by all.)

1. Define the term *Logic*; and examine the merits of the definition.
2. Explain and illustrate :—Extension and Intension (*i.e.*, Denotation and Connotation); Positive and Negative; Bifurcate Division (*i.e.*, Dichotomy); cross-division; definition wider than the notion defined.
3. What is meant by Quality, Quantity, and Distribution, as applied to categorical propositions? Illustrate with examples (*not* symbolical); and shew that the use of diagrammatic circles makes the explanation clearer.
4. Give the contradictory of each of the following :
  - (a) Every sensation is not localized.
  - (b) An import duty is not a tax.
  - (c) Every man has his price.
  - (d) Few men know themselves.
5. Convert each of the following, explaining and naming the process employed in each case :—
  - (a) Heat is a mode of motion.
  - (b) Some theories in philosophy are not tenable.



6. What are the Moods of the Third Figure of the Syllogism? Construct (with propositions, *not* with symbols) syllogisms in the first two of these moods, and reduce them.

7. Explain and illustrate each of the following fallacies with (if possible *original*) examples:—Begging the question, undistributed middle, division and composition.

8. Test the following specimens of reasoning:—

(a) It is an intensely cold climate that is sufficient to freeze mercury; the climate of Siberia is sufficient to freeze it, and hence must be intensely cold.

(b) The more correct the logic, the more certainly will the conclusion be wrong, if the premises are false; therefore, where the premises are wholly uncertain the best logician is the least safe guide.

(c) Dryden authorizes the conceit that medicine can never be useful or requisite, because

“God never made his works for man to mend.”

*De Quincey.*

(d) Society is necessary: hence the christian religion is divine, for it is the only means of bringing society to its perfection.

*Lacordaire.*

### THIRD YEAR.

#### MURRAY'S HANDBOOK OF PSYCHOLOGY, BOOK II., PART I.

WEDNESDAY, APRIL 15TH:—MORNING, 9 TO 12.

*Examiner*,.....J. CLARK MURRAY, LL.D.

*Answer only eight questions.*

1. Describe the principal forms of Cognition in the order of their evolution.

2. Illustrate the suggestiveness and the suggestibility of odours.

3. Write a note on the perceptions of Touch.

4. Explain Melody and Harmony in their psychological aspects.

5. State the facts which go to prove that depth in space cannot be perceived by sight.

6. Explain the illusion of the stereoscope.

7. (a) Explain the nature of Attention. (b) Distinguish voluntary and involuntary Attention. (c) Show the connection of Attention with intellectual and moral greatness.

8. Discuss *either* the question of "Primum Cognitum" *or* that of Nominalism and Conceptualism.
9. Explain the nature of Idealisation in general and its particular forms
10. Distinguish Hallucination, Illusion and Fallacy.
11. Write a note on Dreaming *or* on Hypnotism.
12. Distinguish Sensationalism and Idealism in Psychology.

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B.A. ORDINARY EXAMINATIONS.

MURRAY'S INTRODUCTION TO ETHICS, BOOK II.

WEDNESDAY, APRIL 8TH, 1896 :—MORNING, 9 to 12.

*Examiner*,.....J. CLARK MURRAY, LL.D.

*Answer only eight questions.*

1. Explain the general problem of Ethics, as seeking to find (*a*) the Law, (*b*) the End, (*c*) the Good, of human life.
2. Explain the peculiar feature introduced into Utilitarianism by J. S. Mill, and discuss its logical consistency with that theory.
3. Discuss one of the three questions :—(*a*) Is pleasure, as a matter of fact, the only object of pursuit? (*b*) Is pleasure, as a matter of fact, attained by making it the object of pursuit? (*c*) Does Utilitarianism give a philosophical vindication of social morality?
4. Give a sketch of any Stoical theory of Morals.
5. How far does the uncertainty of speculative theories of Morals affect the practical moral code?
6. What place should be assigned to the so-called Duties to God in a philosophical classification of Duties?
7. Define Right, and explain what is the primitive Right from which all others are derived.
8. Explain the essential nature of human society, and distinguish the three forms of society which constitute an essential feature of human life.
9. Explain the part of Occupancy, of Labour, and of Contract in originating Real Rights.
10. Write a note on Forfeiture of Rights.

11. Show how the moral consciousness passes over into the religious consciousness.
12. Explain the function of *askesis* in moral education.

## THIRD YEAR EXAMINATIONS.

## HONOURS IN MENTAL AND MORAL PHILOSOPHY.

## GREEK PHILOSOPHY AND PLATO'S THEÆTETUS.

THURSDAY, APRIL 2ND :—MORNING, 9 TO 12.

*Examiner*,.....J. CLARK MURRAY, LL.D.

1. Describe the periods into which the history of Greek Philosophy was divided in the lectures.
2. Sketch the speculations of any one of the philosophers of the first period.
3. Give an account of the Dialectic *or* of the Ethics of Plato.
4. Give some account [of the Scepticism *either* of the Pyrrhonians *or* of the New Academy.
5. Give a general outline of the Theætetus.
6. Give a more detailed outline of any one of the three parts into which the dialogue may be divided.

## THIRD YEAR EXAMINATIONS.

## HONOURS IN MENTAL AND MORAL PHILOSOPHY.

## JAMES' PRINCIPLES OF PSYCHOLOGY.

AND

## FRASER'S SELECTIONS FROM BERKELEY.

FRIDAY, APRIL 24TH :—MORNING, 9 TO 12.

*Examiner*,.....J. CLARK MURRAY, LL.D.*Answer four questions from A., and three from B.*

A.

1. Describe the Emotions of Self, *or* state the theories of Self-consciousness.

2. Discuss the question, how many things can be attended to at once ;  
or give an account of acquired inattention.
3. Explain James' doctrine of Abstract Ideas.
4. State James' theory of discrimination, and his objections to the trans-  
cendentalist theory.
5. Describe the effect of voluntary effort on Association.
6. What are the conditions of goodness in memory?

## B.

1. How does Berkeley explain the perception of distance, of magnitude, of situation by sight?
2. State Berkeley's general theory of perception.
3. State, with his reply, any one of the objections to his theory, mentioned in "The Principles of Human Knowledge."
4. State the theory that God really *speaks* to us.
5. Give some account of "Siris."

THIRD YEAR HONOURS IN MENTAL AND MORAL PHILOSOPHY.

LOGIC.

SATURDAY, APRIL 25TH:—AFTERNOON, 2 TO 3.

*Examiners*, ..... { J. CLARK MURRAY, LL.D.  
P. T. LAFLEUR, M.A.

1. Explain and illustrate Natural classification, as contrasted with artificial or technical classification.
2. Give in outline Mill's *general* classification of Fallacies.
3. What, in your opinion, is the distinction between Logic considered as a *practical* and as a *speculative* science?
4. Explain briefly and illustrate: Analogy, Colligation, Hypothesis, Verification, Residual Phenomena.
5. In what sense does Jevons employ the terms Cause, Experimentum Crucis?
6. What is implied in Venn's postulate that the empirical logician proceeds on a basis of dualism?
7. Examine Venn's criticism of Mill's views of the syllogism in relation to Induction.

## B.A. EXAMINATIONS.

## HONOURS IN MENTAL AND MORAL PHILOSOPHY.

## ZELLER'S STOICS, EPICUREANS AND SCEPTICS.

MONDAY, MARCH 30TH :—AFTERNOON, 2 TO 5.

*Examiner*,..... J. CLARK MURRAY, LL.D.

1. Write a note on any two of the following :—Zeno, Chrysippus, Epicurus, Pyrrho, Carneades.
2. Sketch *either* the Stoical *or* the Epicurean Science of Nature.
3. Sketch *either* the Stoical *or* the Epicurean Ethics.
4. Give some account of the Scepticism *either* of the Pyrrhonians *or* of the New Academy

## B. A. EXAMINATIONS.

## HONOURS IN MENTAL AND MORAL PHILOSOPHY.

## SPINOZA'S ETHICS.

WEDNESDAY, APRIL 1ST :—9 TO 12 A.M.

*Examiner*,..... J. CLARK MURRAY, LL.D.

1. Give an outline of the first Part of the Ethics.
2. Point out wherein Spinoza approaches the old religious Occasionalists, wherein he approaches Agnosticism.
3. How far does the Psychology of Spinoza, how far does it not, favour Sensationalism? Explain, in this connection, his doctrine of immortality.
4. Give Spinoza's classification of Cognitions and of Emotions.
5. Explain Spinoza's definition of Perfection.
6. Explain his definition of the "status naturalis" and the "status civilis" of man.
7. How does Spinoza explain the possibility of overcoming passion?
8. What does Spinoza mean by "amor Dei intellectualis"?



## B.A. EXAMINATIONS.

## HONOURS IN MENTAL AND MORAL PHILOSOPHY.

## THE PHILOSOPHY OF KANT.

SATURDAY, APRIL 4TH :—MORNING, 9 TO 12.

*Examiner*, ..... J. CLARK MURRAY, LL.D.

1. Distinguish the three Critiques of Kant.
2. Give the table of the Categories, explaining how they are found.
3. Give the Principles of the Pure Understanding, explaining how they are derived from the Categories.
4. State the Antinomies of Pure Reason.
5. Explain in general how the first two, and how the last two, Antinomies are solved.
6. Give a sketch of the Dialectic *either* of Pure Practical Reason *or* of the Teleological Judgment.

## B.A. EXAMINATIONS.

## HONOURS IN MENTAL AND MORAL PHILOSOPHY.

## JAMES' PRINCIPLES OF PSYCHOLOGY, VOL. II.

MONDAY, APRIL 6TH :—MORNING, 9 TO 12.

*Examiner*, ..... J. CLARK MURRAY, LL.D.*Answer only eight questions.*

1. Explain the mental effect of contrast, and the theories to account for it.
2. "Vague images are not necessarily general notions." Explain.
3. Discuss the question, whether Perception is an unconscious inference.
4. State, in substance, James' theory of the Perception of Space.
5. "Reality is something quite different from all the other predicates which a subject may possess." Explain.
6. "Every possible feeling produces a movement." Explain and illustrate.
7. Show that instincts are sometimes inhibited, and sometimes die away together.

8. State James' general theory of Emotion.
9. Show that pleasure and pain are not the only springs of action.
10. What is the essential feature of willing ?
11. State the theories to account for Hypnotism.
12. Give a brief outline of the chapter on Necessary Truths and the Effects of Experience.

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B.A. EXAMINATIONS.

HONOURS IN MENTAL AND MORAL PHILOSOPHY

ARISTOTLE'S NICOMACHEAN ETHICS.

FRIDAY, APRIL 10TH:—MORNING, 9 to 12.

*Examiner*,.....J. CLARK MURRAY, LL.D.

*Answer only eight questions.*

1. What is the Good, and of what science is it the end ? How far do all men agree, how far do they differ, as to what the Good is ?
2. State exactly, and explain fully, Aristotle's definition of Ethical Virtue.
3. Give two illustrations of the definition.
4. Distinguish Universal and Particular Justice, and the divisions of the latter.
5. Define Dianoetic Virtue, and each of its forms.
6. What are the three forms of evil to be avoided, and their several opposites ?
7. Discuss the question, whether vice is compatible with real knowledge.
8. "When men are friends, there is no need of justice ; but when they are just, they need friendship." Explain fully what this implies with regard to the supreme principle of social morality.
9. Distinguish different forms of friendship.
10. Distinguish different forms of self-love.
11. Explain the influence of different forms of government upon friendship.
12. Give a brief outline of the tenth Book of the Ethics.

## B.A. EXAMINATIONS.

## HONOURS IN MENTAL AND MORAL PHILOSOPHY.

## HISTORY OF MODERN PHILOSOPHY.

MONDAY, APRIL 13TH, 1896 :—MORNING, 9 TO 12.

Examiners,..... { J. CLARK MURRAY, LL.D.  
P. T. LAFLEUR, M.A.

*Answer A and B in separate books.*

## A.

1. Give some account of the influence of physical science in expanding the conception of the universe at the opening of modern history.
2. Trace the general course of the Cartesian movement down to Spinoza.
3. Give a general sketch of the Idealistic movement in England prior to Berkeley.
4. Give an outline of Hobbes' ethico-political speculations.

## B.

1. State the principal causes that have tended to impress a distinctive character on modern English thought ; and discuss fully any one.
2. Explain with care: Empiricism, Utilitarianism, Materialism, the association-system of psychology.
3. State, with some fulness, the principal points in the political teaching of Burke ; or, in that of Paley.
4. Discuss Malthus' principle of population ; and express some opinion concerning its importance in social science because of the deductions to which it leads.

## B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

MILL : *A System of Logic, Bk. VI.* SPENCER : *First Principles.*

MONDAY, 20TH APRIL, 1896 :—MORNING, 9 TO 12.

Examiners,..... { J. CLARK MURRAY, LL.D.  
P. T. LAFLEUR, M.A.

1. State clearly the grounds given by Mill for Universal Determinism. How is his position to be distinguished from that of the Fatalist ?

2. Why cannot *Ethology*, or the science of the formation of character, be an experimental and exact study? What, according to Mill, is the only sound method of pursuing it?

3. Explain clearly the conception conveyed by the phrase "social science;" and give some idea of the way in which it should be studied.

4. Make some notes on:—Conservation of Energy; Equilibration; the rhythm of motion; the instability of the homogeneous.

5. Explain what Spencer means by the Unknowable; and shew his application of this to any *one* ultimate scientific idea.

6. "The process of integration is invariably followed by disintegration." Comment on Spencer's philosophical application of this; and illustrate the assertion with an example, *original* if possible.

7. What does Spencer mean by calling his system "Transfigured Realism"? Express some opinion as to the philosophical value and significance of his fundamental position.

## B.A. EXAMINATIONS.

### HONOURS IN MENTAL AND MORAL PHILOSOPHY.

#### MAINE'S ANCIENT LAW.

WEDNESDAY, APRIL 22ND:—MORNING 9 TO 12.

*Examiner*, ..... J. CLARK MURRAY, LL.D.

Write a short essay on any three of the following subjects:—

1. The jural condition of primitive society.
2. The ancient history of the doctrine of a Law of Nature.
3. The modern history of the doctrine.
4. Primitive Property.
5. The early history of Testamentary Succession.
6. The development of the idea of Crime.

## B. A. EXAMINATIONS.

## HONOURS IN MENTAL AND MORAL PHILOSOPHY.

## WATSON'S OUTLINE OF PHILOSOPHY.

SATURDAY, APRIL 25TH :—MORNING, 9 TO 12.

*Examiner*.....J. CLARK MURRAY, LL.D.*Answer only eight questions.*

1. Give an account of Mill's view of Mathematics.
  2. Give a critical examination of that view.
  3. Sketch the positive Philosophy of Comte.
  4. Discuss the Agnostic aspect of that Philosophy.
  5. Explain Watson's threefold division of Philosophy.
  6. Examine Mill's conception of a cause.
  7. What place is left for philosophical Teleology consistently with Darwinism?
  8. "There is one datum of consciousness, Mr. Spencer tells us, that must be assumed by every philosophy, viz., the absolute distinction of subject and object." Examine this statement.
  9. What two oppositions does Duty imply? Show why the opposition *seems*, but *really is not*, absolute.
  10. Give Watson's explanation of what constitutes a *motive* in action.
  11. Examine Kant's doctrine of desire, and of action done from desire being contrary to Duty.
  12. Write a note on the Philosophy of Religion *or* on the Philosophy of Art.
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## FRENCH.

## EXAMENS DE FIN D'ANNÉE.

## LETTRES.—1ÈRE ANNÉE.

LE 15 AVRIL :—DE 9 HEURES À MIDI.

Examineurs, ..... } M. INGRES.  
 } LE REV. J. L. MORIN.

A.

Répondre à cinq des questions suivantes :

1. Raconter en prose une des fables suivantes :

*Le Loup et l'Agneau.*  
*Le Laboureur et ses Enfants.*  
*Le Corbeau et le Renard.*  
*La Cigale et la Fourmi.*

2. Quels sont les nombres composés qui prennent la conjonction
- et*
- ?

3. Quelles prépositions emploie-t-on avec les noms géographiques ?

4. Indiquer la prononciation des termes suivants :

est-il  
 et il  
 grand homme  
 quand elle  
 sang impur

5. Dans une langue dérivée, les mots deviennent-ils en général plus longs ou plus courts que dans la langue mère ? Pourquoi ? Exemples.

6. Définir le mot
- blanchir*
- , et citer d'autres mots formés d'une manière analogue.

7. Analyser les phrases suivantes :

Ces fleurs sentent bon.  
 Je le sens bien.  
 Et pourtant ce sont tout bonnement  
 des fleurs des champs.

8. Donner les temps primitifs des verbes suivants : être, avoir, aller, boire, craindre, dire, écrire, frire, haïr, joindre, nuire, naître, partir, savoir, suivre, voir, vêtir.

9. Donner la famille des mots :

vin, cuire, vis.

10. Ecrire une vingtaine de lignes sur l'Avare.

B.

Dictée.

JEANNE DARC.

Jeanne naquit à Vaucouleurs, aujourd'hui chef-lieu de canton du département de la Meuse.

Elle était la troisième fille d'un laboureur, Jacques Darc et d'Isabelle Romée.

Elle eut deux marraines, dont l'une l'appela Jeanne, et l'autre Sybille.

Tandis que les autres enfants allaient, avec le père, travailler aux champs ou garder les bêtes, la mère tint Jeanne près d'elle, l'occupant à coudre ou à filer.

Tout le monde vantait sa charité. C'était la meilleure fille du village.

*Abrégé de Michelet.*

C.

Reproduction par écrit de l'expérience suivante :

LE PENDU SANS CORDE.

Faites tremper un fil dans de l'eau fortement salée, faites le sécher, et cela deux ou trois fois de suite. Cette préparation doit se faire en secret, et vous présentez au public votre fil, qui a toute l'apparence d'un fil ordinaire.

Suspendez y une bague que vous aurez choisie aussi légère que possible. Mettez le feu au fil, qui brûlera d'un bout à l'autre, et les spectateurs seront surpris de voir la bague rester suspendue à la cendre résultant de cette combustion.

En réalité, la partie fibreuse du fil a été brûlée ; mais il reste un petit tube de sel assez solide pour que, si l'on opère à l'abri des courants d'air la bague s'y maintienne suspendue.

Cette expérience, qui est connue sous le nom du *pendu sans corde*, peut être variée de la manière suivante :

Attachez quatre bouts de fil aux quatre coins d'un petit rectangle de mousseline, de façon à faire une sorte de hamac. Faites tremper le tout dans de l'eau très salée, en recommençant trois ou quatre fois ces deux opérations.

Une fois les fils et la mousseline bien imbibés de sel et parfaitement secs, placez un œuf vide dans le hamac suspendu.

Mettez le feu au hamac ; il flambera, ainsi que les quatre fils ; et si l'expérience a été bien préparée, l'œuf reste suspendu, au grand étonnement de l'assistance.

Dater en toutes lettres.

## EXAMENS DE FIN D'ANNÉE.

LETTRES—2<sup>ME</sup> ANNÉE.

LE 15 AVRIL :— DE 9 HEURES À MIDI.

*Examineurs*, ..... } M. INGRES.  
 } LE REV. J. L. MORIN.

## A.

Répondre à cinq des questions suivantes :

1. Pourquoi ne peut-on pas employer la conjonction *si* (conditionnel) avec le mode conditionnel ?

2. Indiquer les différents rôles du mot *si*, avec des exemples.

3. Pourquoi, dans les mots *grand'mère*, *grand'rue*, *grand'messe*, etc., l'adjectif n'est-il pas au féminin ?

4. Quels sont les mots français dérivés du latin *senex* ?

5. Indiquer la différence entre

encore et de nouveau  
 savoir et connaître  
 user et employer  
 retourner et revenir  
 en et dans  
 changer et changer de  
 aussi et non plus  
 ça et çà

6. Expliquer le mot *bouchée*, et donner une demi-douzaine de mots de formation similaire.

7. Expliquer les expressions suivantes :—

A la guerre comme à la guerre.  
 Casser une croûte.  
 Un repas pantagruélique.  
 Faire son chemin.  
 Partager la poire.  
 En désespoir de cause.  
 Au fur et à mesure.

## B.

Ecrire une demi-page sur Esther.

## C.

## Dictée

## VERCINGÉTORIX.

C'était un jeune Gaulois intrépide et ardent. Son père, l'homme le plus puissant des Gaules, avait été brûlé comme coupable d'aspirer à la royauté.

Le jeune homme repoussa toujours les avances de César, et ne cessa, dans les assemblées, dans les fêtes religieuses, d'animer ses compatriotes contre les Romains.

Vaincu par César, Vercingétorix se retrancha sous les murs d'Alesia, ville forte située en haut d'une montagne.

Les efforts des assiégés réduits à une horrible famine, ceux de deux cent cinquante mille Gaulois, qui attaquaient César du côté de la campagne, échouèrent également.

Vercingétorix se livra alors comme l'auteur de toute la guerre. Il monta sur son cheval de bataille, et revêtit sa plus riche armure. Puis, après avoir tourné en cercle autour du tribunal de César, il jeta son épée, son javelot et son casque au pied du Romain, sans dire un seul mot.

*Abrégé de Michelet.*

## D.

Reproduction par écrit d'une anecdote racontée dont voici le sommaire :

Un campagnard se lie d'amitié avec un ours, qui se charge d'écarter les mouches pendant le sommeil de son ami.

Un jour que le vieillard dormait d'un profond somme

Sur le bout de son nez une allant se placer

Mit l'ours au désespoir ; il eut beau la chasser.

"Je l'attraperai bien, dit-il ; et voici comme."

Aussitôt fait que dit : le fidèle émoucheur

Vous empoigne un pavé, le lance avec raideur,

Casse la tête à l'homme en écrasant la mouche ;

Et, non moins bon archer que mauvais raisonneur,

Raide mort étendu sur la place il le couche,

Rien n'est si dangereux qu'un ignorant ami ;

Mieux vaudrait un sage ennemi.

*Le Pavé de l'ours* passé en proverbe.

Dater en toutes lettres.

## FRENCH.

## INTERMEDIATE EXAMINATION.

APRIL 16TH, 1896.

*Examiner*.....F. DE KASTNER.

1. Traduisez en anglais : (Ponsard, l'Hon. et l'Arg., Acte III, Scène I.)  
 Ce n'est pas tout : telle est votre ardeur pour cet homme,  
 Qu'il faut que, sur le champ, l'affaire *se consume*,  
 Et que sans rechercher au cœur de votre enfant  
 Si le premier amour n'est pas encore vivant  
 Si ses vœux ne sont pas pour l'un plus que pour l'autre,  
 En place de son choix vous *imposiez* le votre,  
 Et *jetez* votre fille en d'éternels liens,  
 Brusquement, au hasard, après deux entretiens.  
 Ne vous étonnez plus, morbleu ! des fruits que porte  
 Une sotte union qu'on bâcle de la sorte ;  
 La nature, messieurs, est plus forte que vous ;  
 Les femmes ont un cœur tout aussi bien que nous,  
 Et le besoin d'aimer, qui tient aux lois suprêmes  
 S'y révolte et triomphe en dépit d'elles-mêmes. (10)

2. A quel temps et à quel mode sont les verbes soulignés ci-dessus ?  
 Pourquoi ? A quel mot se rapporte-y dans le dernier vers. (5)

3. Traduisez : Comme cet horizon finit bien dans ce fond clair. Les  
 mieux famés. Etre sur la grabat. J'étais trop à mon deuil. Je suis  
 d'une trempe assez forte. Un père sans entrailles. Tu vois tout en laid.  
 Il joue un jeu d'enfer. Je n'ai garde d'entamer un débat. La regardant  
 dans les yeux. (10)

4. Traduisez : In a year the wings were finished, and on a morning  
 appointed, the maker appeared furnished for flight on a little promontory :  
 he waved his pinions a while to gather air, then leaped from his stand,  
 and in an instant dropped into the lake. His wings, which were of no  
 use in the air, sustained him in the water, and the prince drew him to  
 land, half dead with terror and vexation. (10)

JOHNSON'S RASSERAS, chapter VI, last 5.

5. Traduisez : To give it up (in guessing). He does not know which  
 way to turn himself. To die a natural death. To beat about the bush.  
 To keep a sharp look out. To lay up something for a rainy day. To  
 carry coals to Newcastle. They are hand and glove together. Many a  
 little makes a muckle. He would skin a flint. (10)



## 6. Traduisez:

Seigneur, je n'ai jamais contemplé qu'avec crainte  
 L'auguste majesté sur votre front empreinte :  
 Jugez combien ce front irrité contre moi  
 Dans mon âme troublée a dû jeter d'effroi :  
 Sur ce trône sacré qu'environne la foudre  
 J'ai cru vous voir tout prêt à me réduire en poudre.  
 Hélas ! sans frissonner, quel cœur audacieux  
 Soutiendrait les éclairs qui partaient de vos yeux ?  
 Ainsi du Dieu vivant la colère étincelle.....

(5)

RACINE, ESTHER, Acte II, Scène VII.

7. Traduisez : C'est fait d'Israel. Prévenu contre nous. Ma vie à peine a commencé d'éclore. J'inventai des couleurs. Et que n'a-t-il plus tôt. Que sert de se flatter. Ce zèle que vous fîtes éclater. Dussiez-vous demander. Cyrus, avant qu'il vît le jour. Mes yeux sont dessillés.

(10)

8. Nommez les deux principales langues issues de la langue romaine. Quel est le plus ancien monument de la langue française. Qu'était-ce que la confrérie de la passion ?

(5)

9. Qu'est-ce que Montaigne a voulu peindre dans ses Essais ? Qu'a-t-il peint en réalité ? Dans quel genre Ronsard a-t-il excellé ? Que Malherbe se proposait-il de rendre à la langue ?

(5)

10. Faites une courte esquisse de la vie de Molière.

(10)

11. Quels sont les principaux ouvrages de Bossuet : 1o comme orateur, 2o comme historien, 3o comme philosophe religieux et théologien ? Quels ouvrages Fénelon a-t-il composés pour l'instruction du duc de Bourgogne et sur l'éducation. Marquez, si vous le pouvez, le contraste entre Bossuet et Fénelon.

(10)

12. Quels sont les auteurs des ouvrages suivants : Le Joueur, l'Institution de la Religion Chrétienne, les Provinciales, la traduction des œuvres de Plutarque, les Caractères, la Recherche de la Vérité, le Discours de la Méthode, les Plaideurs, le Lutrin, Polyeucte.

(10)

Dater en toutes lettres.

## EXAMENS DE FIN D'ANNÉE.

LETTRES—3<sup>ME</sup> ANNÉE.

LE 17 AVRIL 1896 :—DE 9 À 12.

Examineurs, ..... { M. INGRES.  
LE REV. M. J. L. MORIN.

1. Comparez la littérature française du XVIII<sup>ème</sup> à celle du XVII<sup>ème</sup> au point de vue : (a) de la base, (b) du but, (c) de l'esprit, (d) de l'influence étrangère et à l'étranger, (e) de l'antiquité, (f) de l'étendue.

2. Quels sont les quatre grands génies qui représentent le mieux le XVIII<sup>ème</sup> siècle ? Indiquez leurs principales œuvres, et tracez une courte esquisse de la vie de l'un d'eux.

3. Citez un trait de la générosité de Montesquieu.

4. Faites une courte appréciation des ouvrages suivants : (1) *L'Emile*. (2) *Lettre sur les spectacles*. (3) *Le diable boiteux*. (4) *Gil Blas*. (5) *Paul et Virginie*.

5. (a) Comment peut-on diviser le mouvement littéraire en France au XIX<sup>ème</sup> siècle ? (b) Indiquez les caractères des deux premières périodes.

6. (a) Qu'est-ce que l'école romantique entreprit de faire ? (b) Qui en fut le chef ? (c) Où en a-t-il formulé les principes ? (d) Quels sont-ils ? (e) Quels sont les défauts de cette école ?

7. Qu'est-ce qui constitue le cadre de l'action d'une tragédie ? Indiquez-les dans *Polyeucte*.

8. Traitez la question des unités dans *Polyeucte*.

9. Faites une courte analyse de cette tragédie.

10. Expliquez les expressions suivantes ou donnez-en l'équivalent en anglais :

C'est à vous de faire cela ; c'est à vous à faire cela. Argent comptant. Le défaire de quelque chose.

Ne savoir de quel côté donner de la tête. Force me fut de partir. Il tient bon. Il ne sait à quoi s'en tenir.

Nous devons commencer sur de nouveaux frais. Qu'importe, il doit le faire. Prendre la parole.

11. Traduisez en français :

"Pride," said Imbuc, "is seldom delicate; it will please itself with very mean advantages, and envy feels not its own happiness, but when it may be compared with the misery of others. Those men were my enemies because they grieved to think me rich, and my oppressors because they delighted to find me weaker."

"Proceed," said the Prince; "I doubt not of the facts which you relate, but imagine that you impute them to mistaken motives."

To the tutor of the young Prince I recommended myself so much that I was presented to the Emperor as a man of uncommon knowledge. The Emperor asked me many questions concerning my country and my travels and though I cannot now recollect anything that he uttered above the power of a common man, he dismissed me astonished at his wisdom and enamoured of his goodness.

RASSELAS, Ch. IX.

Dater en toutes lettres.

### BACCALAURÉAT ÈS-LETTRES.

LE 17 AVRIL 1896.

Examineurs,..... { M. INGRES.  
LE REV. J. L. MORIN

A.

(Répondre aux questions suivantes :)

1. Donner toutes les formes possibles du mot *tout*, et indiquer la prononciation dans chaque cas.
2. Dire quelles peuvent être les fonctions des mots *gai* et *que*.
3. Quel est l'emploi de l'*Imparfait*, du *Passé défini* et du *Passé indéfini* ?
4. Critiquer la phrase : Monsieur X est-il chez soi ?
5. Ecrire six phrases contenant chacune un verbe au subjonctif, et dire pourquoi le subjonctif est employé.
6. Tracer brièvement l'origine de la tragédie française.
7. Etablir à grands traits la différence entre une tragédie et un drame.
8. Donner votre opinion sur les cinq principaux personnages de Poly-eucte. Une cinquantaine de mots sur chacun.

B.

Remplacer dans les passages suivants, les points de suspension par une citation, et indiquer l'origine de cette dernière.

1. "Les duels des cygnes sont terribles : la tactique principale des deux combattants consiste à enrouler le cou de l'adversaire et à le tenir enfoncé dans l'eau jusqu'à ce que la victime expire par asphyxie.

.....  
disent les cygnes, en parodiant sans s'en douter, le fameux vers du tyran romain."

2. "Jocrisse, valet très ignorant, son nom l'indique, pliait sous une pile de livres très savants qu'il apportait à son maître. Celui-ci, qui aimait le mot pour rire, lui dit : "Eh bien, mon ami, te voilà comme....."

3. "Ces objets merveilleux que chaque exposition de l'industrie offre à nos regards, par qui sont-ils créés ? Par un ouvrier dont on ne sait pas le nom. L'industriel seul est nommé : ....."

4. "Une réhabilitation historique est presque impossible ; les écrivains les plus habiles en sont pour leurs phrases. Insouciant ou paresseuse, l'opinion ne veut pas changer ; elle préfère dire comme un historien bien connu : J'en suis bien fâché, mais ....."

5. "Le mariage était autrefois une affaire de goût, d'humeur, d'inclination, de sentiment ..... : aujourd'hui ce n'est plus qu'une question d'argent ; nous ne nous sommes pas contentés de placer le cœur à droite, nous l'avons supprimé tout à fait, comme une chose inutile et souvent gênante."

6. "Combien de gens se dispensent de la peine de réfléchir, même quand il s'agit des questions les plus graves, et posent insoucieusement leur tête sur ....."

## C.

Développer le sommaire suivant (300 mots environ).

Santeuil, chanoine de Saint-Victor, rentre un soir assez tard au couvent. Il avait passé la soirée en ville. Le portier ne veut pas ouvrir. Le poète lui glisse quelques écus, et entre. Cependant Santeuil fait semblant d'avoir laissé tomber quelque monnaie sur le trottoir. Le portier, devenu complaisant, s'empresse de chercher. Pendant ce temps, Santeuil ferme promptement la porte et voilà notre portier dans la rue. Celui-ci, pour rentrer, est obligé de glisser à son tour les écus qu'il vient de recevoir.

## D.

DICTÉE.—RICHELIEU.

Un peintre éminemment fidèle, le Flamand Philippe de Champagne, nous a mis sur la toile, au vrai, la fine, forte et sèche figure du cardinal de Richelieu.

Il vient à nous. On n'est pas rassuré. Ce personnage-là a bien les allures de la vie. Mais, vraiment, est-ce un homme ? un esprit ? Oui. Une intelligence à coup sûr, ferme, nette, dirai-je lumineuse ? Oui, de lueur sinistre. S'il faisait quelques pas de plus, nous serions face à face. Je ne m'en soucie point. J'ai peur que cette forte tête n'ait rien du tout dans la poitrine, point de cœur, point d'entrailles.

Que de contrastes en lui ! Si dur, si souple, si entier, si brisé !.....

Il vous regarde du fond de son mystère, le sphinx à robe rouge. Je n'ose dire du fond de sa fourberie. Car, au rebours du sphinx antique, qui meurt si on le devine, celui-ci semble dire :

"Quiconque me devine en mourra."

MICHELET.

E.

Esquisser le mécanisme du vers français et le rôle de la Rime.

Etablir les règles observées dans la contexture du Rondel.....du Sonnet.

Compléter les vers suivants :

LE VASE BRISÉ.

Le vase où meurt cette verveine  
D'un coup d'éventail fut fêlé ;  
Le coup dut ..... à peine,  
Aucun bruit ne l'a .....

Mais la ..... meurtrissure,  
Mordant le crystal chaque .....  
D'une marche invisible et sûre  
En a fait lentement le tour.

Son eau fraîche a fui .....,  
Le suc des fleurs s'est épuisé ;  
Personne ..... ne s'en doute,  
N'y touchez pas, il est brisé.

Souvent aussi la main qu'on aime,  
Effleurant le cœur, le meurtrit ;  
Puis le cœur ..... de lui-même,  
La fleur de son amour .....

Toujours intact aux yeux du monde,  
Il sent croître et pleurer tout bas  
La blessure fine ..... ,  
Il est brisé, .....

SULLY PRUD'HOMME (1839)

Vers de huit syllabes, Rimes croisées.



## TROISIÈME ANNÉE.

## "HONNEURS."

"*Horace*," "*Phèdre*," "*Les Plaideurs*."

MERCREDI, 22 AVRIL, DE 9 À 12.

Examinateurs,..... } M. INGRES.  
J. L. MORIN.

1. (a) De qui Corneille a-t-il emprunté le sujet d'*Horace*? (b) Quels éléments lui fournissait l'histoire et qu'y a-t-il ajouté?

2. (a) Quelles sont les *passions* qui forment les ressorts de l'action dans cette tragédie? Indiquez le *nœud* et le *dénouement* de cette pièce.

3. L'unité d'action et d'intérêt est-elle compromise dans les deux derniers actes d'*Horace*? Développez votre réponse en l'appuyant de preuves.

4. Traduisez les passages suivants d'Horace, et indiquez-en le contexte et les personnages qui se trouvent en scène:

(a) Si vous n'êtes Romain, soyez digne de l'être;  
Et si vous m'égalez, faites-le mieux paraître.  
La solide vertu dont je fais vanité  
N'admet point de faiblesse avec sa fermeté;  
Et c'est mal de l'honneur entrer dans la carrière,  
Que dès le premier pas regarder en arrière.  
Notre malheur est grand, il est au plus haut point:  
Je l'envisage entier, mais je n'en frémis point:  
Contre qui que ce soit que mon pays m'emploie,  
J'accepte aveuglément cette gloire avec joie;  
Rome a choisi mon bras, je n'examine rien.  
Avec une allégresse aussi pleine et sincère  
Que j'épousai la sœur, je combattrai le frère.  
Et, pour trancher enfin ces discours superflus  
Albe vous a nommé, je ne vous connais plus!

(b) O ciel! qui vit jamais une pareille rage!  
Crois-tu donc que je sois insensible à l'outrage,  
Que je souffre en mon sang ce mortel déshonneur?  
Aime, aime cette mort qui fait notre bonheur,  
Et préfère du moins au souvenir d'un homme  
Ce que doit ta naissance aux intérêts de Rome.

5. "*Le théâtre de Racine est l'image de la cour*," justifiez cette assertion.

6. (a) De quelles pièces Racine s'est-il aidé dans *Phèdre*? (b) Montrez la différence capitale qui existe entre la tragédie de Racine et celles dont il a emprunté?

7. "La plus grande difficulté du plan de cette tragédie, tel que conçu par Racine, était de motiver une accusation atroce sans rendre Phèdre odieuse." Pourquoi?..... Comment Racine surmonte-t-il cette difficulté?

8. Faites une courte analyse de Phèdre.

9. (a) Qu'avez-vous à dire du récit de la mort d'Hippolyte? (b) Citez-en une douzaine de vers que vous traduirez en anglais. (c) Que pouvez-vous répondre à ceux qui disent que dans le saisissement où il doit être, Thérémène ne peut avoir la force d'entrer dans aucun détail.

10. Donnez les équivalents anglais des expressions suivantes tirées des *Plaideurs*, ou expliquez-en le sens en français :

- (a) Tel qui rit vendredi, dimanche pleurera.
- (b) On apprend à hurler, dit l'autre, avec les loups.
- (c) Je faisais claquer mon fouet tout comme un autre.
- (d) Tous les plus gros messieurs me parlaient chapeau bas ;  
Monsieur de Petit-Jean, ah ! gros comme le bras !
- (e) Ma foi, j'étais un franc portier de comédie.
- (f) On n'entrait pas chez nous sans graisser le marteau.
- (g) Point d'argent, point de suisse.
- (h) On dit que son timbre est brouillé.
- (i) Il marmotte toujours certaines patenôtres.
- (j) Vaille que vaille.
- (k) C'est dommage ; il avait le cœur trop au métier.
- (l) Crois-tu qu'un juge n'ait qu'à faire bonne chère,  
Qu'à battre le pavé, comme un tas de galans  
Courir le bal la nuit, et le jour les brelans ?

3ME ANNÉE.

"HONNEURS."

*Phonétique—Grammaire Historique.*

LE VENDREDI, 24 AVRIL 1896 :—DE 9 HEURES À MIDI.

Examineurs, ..... { M. INGRES.  
J. L. MORIN.

1. Énoncez, avec des exemples à l'appui, les règles générales de la transformation des voyelles *toniques* latines suivantes en passant dans la langue française : (1)  $\bar{a}$ , (2)  $\bar{e}$ ,  $\bar{i}$ , (3)  $\bar{o}$ ,  $\bar{u}$ , (4)  $\bar{i}$ ,  $\bar{u}$ , selon que ces voyelles sont (a) *libres* ou (b) *entravées*.

2. Expliquez, par les lois de la phonétique, la transformation des mots latins suivants en devenant français : *paxem*, paix ; *lana*, laine ; *soliculum*, soleil ; *sanitatem*, santé ; *numerus*, nombre ; *dormitorium*, dortoir ; *causam*, chose. *Leptorem*, lièvre ; *generum*, gendre ; *cameram*, chambre.
3. Qu'entendez-vous par *doublets*? Donnez-en trois exemples.
4. Quelles sont les déclinaisons des nom féminins et des noms masculins de l'ancienne langue française?
5. Ecrivez et expliquez la déclinaison des mots suivants, au singulier : — *Ber*, *cuens*, *soer*, *sire*, *emperére*.
6. (a) Quelle est la déclinaison de l'article dans les deux genres et dans les deux nombres? (b) Indiquez quelques particularités phonétiques des formes de l'article. (c) Quels sont les articles contractes?
7. (a) Quelle est la dérivation de *icil*, *icist*, et *ço*. (b) Déclinez ces pronoms ainsi que *toz*.
8. Que représentent les pronoms contractes suivants : *du*, *jel*, *nel*, *nes sis*, *nu*, *sim*, *nem*, *quis*?
9. Expliquez le rôle de l'analogie ou de l'assimilation dans la formation des verbes français.
10. (a) Indiquez les particularités de la conjugaison *incohative*. (b) Qu'entendez-vous par *conjugaisons vivantes*? Citez des exemples.
11. (a) Expliquez les variations du radical des verbes dues au traitement différent des voyelles latines toniques et des mêmes voyelles atones. (b) Où se trouve le radical tonique?
12. Quel est le radical (a) *tonique* des verbes suivants dans l'ancienne langue : *mourir*, *mener*, *peser*, *lever*, *trouver*, *prier*, *prouver*; (b) et le radical atone de : *il voit*, *tu demeures*, *il aime*, *il manje* et *il aine*. (c) Expliquez ces deux dernières formes.

LETTRES.—TROISIÈME ANNÉE.

"HONNEURS."

LUNDI, 20 AVRIL :—DE 9 À 12.

Examineurs,..... { M. INGRES.  
J L. MORIN.

A.

Littérature du XVII Siècle.

1. (a) D'où vient l'appellation "Siècle de Louis XIV" et quelle en est la portée? (b) Tracez un tableau de la société française sous le règne de ce roi.

2. Traitez brièvement les questions suivantes : L'Académie française—(a) sa fondation, (b) ses statuts, (c) ses rapports avec le pouvoir, (d) ses premiers travaux.

3. (a) Qu'est-ce que Louis XIV a fait pour le cartésianisme ? (b) Le caractère de Descartes. (c) Sa méthode. (d) Le cartésianisme dans la littérature du XVIIe Siècle. (e) Le style de Descartes.

4. Indiquez *sommairement* ce que vous connaissez de Molière, en considérant successivement (a) l'homme, (b) le milieu, (c) l'œuvre.

5. (a) Pourquoi La Fontaine ne réussit-il pas à plaire à Louis XIV ? (b) Dites quelque chose de son caractère, de sa vie, de ses protecteurs, de ses lectures, de sa naïveté, de son tour d'imagination.

6. (a) Définissez la fable. (b) Quelles en sont les qualités essentielles ?

7. Faites une courte analyse littéraire de la fable "*Le chêne et le roseau*."

8. Quelle méthode Pascal prétend-il appliquer à l'apologie du dogme ?

9. (a) Quel but se proposait Pascal en écrivant ses *Pensées* ? (b) Qu'est-ce qui lui a inspiré l'idée de cet ouvrage ? (c) Donnez-en le plan.

10. (a) Quels sont les devanciers de Boileau dans l'*Art Poétique* ? (b) Faites connaître le plan de ce poème didactique. (c) Citez quelques préceptes de Boileau sur l'art d'écrire.

11. Pourquoi Boileau ne fait-il pas figurer La Fontaine dans son *Art Poétique* ?

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## LETTRES.

### "HONNEURS."—QUATRIÈME ANNÉE.

LE 20 AVRIL :—DE 9 À 12.

Examineurs,..... { M. INGRES.  
J. L. MORIN.

"*Le Misanthrope*."—"Hernani."—"As you like it."

1. (a) Que signifie *Misanthrope* ? (b) Montrez que ce type, qui devait illustrer la scène française, ne fut point étranger à la littérature antique. (c) A quel genre de comédie appartient le *Misanthrope* ? (d) Quand et où fut-il représenté la première fois ?

2. (a) Faites une analyse sommaire de cette comédie. (b) Molière y a-t-il représenté des originaux contemporains ?

3. (a) Faites ressortir la moralité de cette comédie en y montrant l'action de la *justice distributive*. (b) Molière a été accusé par J. J. Rousseau de tourner la vertu en ridicule dans la personne d'*Alceste*. Prouvez que ce jugement n'est pas fondé.

4. Traduisez en anglais les expressions suivantes tirées du *Misanthrope* :

- (1) Votre chaleur pour lui tombe en vous séparant,
- (2) L'ami du genre humain n'est point du tout mon fait.
- (3) Qu'à son âge il sied mal de faire la jolie !
- (4) Mes yeux sont trop blessés, et la cour et la ville  
Ne m'offrent rien qu'objets à m'échauffer la bile.
- (5) Je n'y puis plus tenir, j'enrage, et mon dessein  
Est de rompre en visière à tout le genre humain.
- (6) Il est vrai votre ardeur pour moi est sans seconde.
- (7) Voulez-vous qu'avec lui je me fasse une affaire ?
- (8) Ces conversations ne font que m'ennuyer,  
Et c'est trop que vouloir me les faire essuyer.
- (9) Dans les propos qu'il tient on ne voit jamais goutte.
- (10) Il est fort peu d'emploi dont je ne sois en passe.
- (11) Et puis-je mais des soins qu'on ne va pas vous rendre ?
- (12) Notre grand flandrin de vicomte est un homme qui ne saurait  
me revenir.

5. (a) Faites une analyse détaillée du caractère de *don Carlos* dans *Hernani*. (b) Victor Hugo a-t-il pris des libertés avec l'histoire dans sa conception de ce personnage ?

6. Racontez le dénouement de ce drame.

7. Traduisez en anglais :

S'il est vrai qu'en son lit solitaire  
Par fois une grande ombre au bruit que fait la terre  
S'éveille, et que soudain son tombeau large et clair  
S'entr'ouvre, et dans la nuit jette au monde un éclair  
Si cette chose est vraie, empereur d'Allemagne,  
Oh ! dis-moi ce qu'on peut faire après Charlemagne,  
Parle ! dût en parlant ton souffle souverain  
Me briser sur le front cette porte d'airain !  
Ou plutôt, laisse-moi seul dans ton sanctuaire  
Entrer, laisse-moi voir ta face mortuaire,  
Ne me repousse pas d'un souffle d'aquillons,  
Sur ton chevet de pierre accoude-toi. Parlons.  
Oui, dusses-tu me dire, avec ta voix fatale,  
De ces choses qui font l'œil sombre et le front pâle !  
Parle ! et n'aveugle pas ton fils épouvanté,



Car ta tombe sans doute est pleine de clarté !  
 Ou si tu ne dis rien, laisse en ta paix profonde  
 Carlos étudier ta tête comme un monde ;  
 Laisse qu'il te mesure à loisir, ô géant.  
 Car rien n'est ici-bas si grand que ton néant !  
 Que ta cendre, à défaut de l'ombre, me conseille !

*Fragment d'Hernani*

8. Traduisez en français :

*Oliver.*—What, you wrestle to-morrow, before the new duke?

*Charles.*—Marry, do I, Sir; and I came to acquaint you with a matter. I am given, Sir, secretly to understand, that your younger brother, Orlando hath a disposition to come in against me, to try a fall. To-morrow, Sir I wrestle for my credit; and he that escapes me without some broken limb shall acquit him well. Your brother is but young, and tender; and for your love, I would be loth to foil him, as I must, for mine own honour, if he come in; therefore, out of my love to you, I came hither to acquaint you withal, that either you might stay him for his intendment or brook such disgrace well as he shall run into; in that it is a thing of his own search, and altogether against my will.

#### LETTRES.

#### “HONNEURS”—QUATRIÈME ANNÉE

LE MERCREDI, 22 AVRIL :— DE 9 HEURES A MIDI.

*Examineurs*, ..... { M. INGRES.  
 ..... { J. L. MORIN.

#### LITTÉRATURE DU XIX SIÈCLE—MAXIMES DE LA ROCHEFOUCAULD.

1. Mentionnez quelques difficultés qu'offre l'étude de l'histoire de la littérature française au XIX siècle.

2. Déterminez brièvement les principaux caractères de cette littérature.

3. “Les trois sources principales d'inspiration où se retrempe, se renouvelle la poésie du XIX siècle sont *Dieu, la nature, l'humanité.*” Développez cette proposition.

4. (a) Montrez que le Romantisme “fut une explosion de jeunesse” et “la liberté dans l'art.” (b) Dites quelque chose : (1°) des précurseurs de cette nouvelle école littéraire, (2°) de ses origines.

5. Faites connaître les luttes des *Classiques* et des *Romantiques*. (a) Pourquoi les premiers avantages furent-ils remportés par les classiques?

(b) Quel est le principal champ de bataille ? (c) Quel usage les romantiques firent-ils de leur victoire ?

6. (a) En combien d'écoles se partagent les historiens de notre siècle. Définissez ces écoles. (b) Indiquez les causes de la supériorité des œuvres historiques du XIX siècle sur les deux siècles précédents.

7. Faites connaître brièvement la vie, le caractère et l'œuvre de *Guizot* ou de *Michelet*.

8. "M. Cousin est fini comme philosophe... Mais il a enlevé, ébloui, régné, fondé une école, imposé sa doctrine comme officielle." Pourquoi ? Quelles sont les causes d'un succès si considérable ? Comment *cette doctrine*, aujourd'hui *ruinée*, a-t-elle pu régner et être acceptée par des esprits éminents ?

9. (a) Exposez sommairement les doctrines philosophiques de M. Cousin, (b) et indiquez les objections les plus graves qu'on peut faire à son système.

10. Tirez un parallèle entre Balzac et George Sand.

11. (a) Montrez que chez la Rochefoucauld "l'homme explique l'écrivain." (b) Qu'est-ce qui a sans doute contribué à lui faire choisir pour ses *maximes* la forme qu'il leur a donnée ? (c) Où plaçait-il la perfection idéale de la forme ? (d) Quelle est "l'idée maîtresse de son œuvre ?" (e) Faites-en une courte critique.

#### LETTRES.

"HONNEURS"—4<sup>ME</sup> ANNÉE.

LE 24 AVRIL :—DE 9 H. À MIDI.

Examineurs, ..... { M. INGRES.  
J. L. MORIN.

#### ANCIENS TEXTES. GRAMMAIRE HISTORIQUE. ESSAIS DE MONTAIGNE.

1. Rendez en français moderne les extraits suivants :

A.

Bons fut li siècles al tens *ancienor*,  
Quer feit i ert e justise et amor,  
Si ert credance, dont or n'i at nul prot ;  
Toz est mudez, perdude at sa color :  
Ja mais n'iert tels com fut als *ancecessors*.

.....

Tei covenist helme e bronie a porter,  
 Espéde ceindre come toi altre per ;  
 Ta grant maisniède dousses gouverner,  
 Le gonfanon *l'empereador* porter,  
 Com fist tes pédre e li tuens parentez.

A tel dolor et a si grant poverte,  
 Filez, t'iés deduiz par aliènes terres !  
 E d'icel bien qui toz doust tuens esire  
 Pou en perneies en ta poure herberge :  
 Se Deu plouüst, *Sire* en dousses estre.

*Vie de St. Alexis.*

B.

Ço sent Rollanz la vedude at perdude,  
 Met sei piez, quant qu'il poet s'esvertudet ;  
 En son visage sa color at perdude,  
 Dedevant lui at une pièdre brune ;  
 Dis cols i fiert par doel e par rancune,  
 Croist li aciers, ne fraint ne ne s'esgruignet ;  
 Et dist li *cuens* : "Sainte Marie, ainde !  
 E ! Durendal, bone, si mare fustes !  
 Quant jo n'ai prot, de vos nen ai meins cure  
 Tantes batailles en champ en ai vencudes,  
 Et tantes terres larges escombatudes,  
 Que Charles tient, qui la barbe at chanude.  
 Ne vos ait hom qui por altre s'en fuiet !  
 Molt bons vassals vos at lone tens tenude ;  
 Jamais n'iert tels en France l'assolude.

.....  
 Alde la bèle est a sa pu aléde  
 Cuidet li reis qu'éle se seit pasméde ;  
 Pitiét en at, sin ploret l'empérédre,  
 Prent la as mains, si l'en at relevéde :  
 Sor les espalles at la teste clinéde.  
 Quant Charles veit que morte l'at trovéde  
 Quatre contesses sempres i at maudédes,  
 Ad un mostier de *nonains* est portéde,  
 La nuit la guaitent entresqu'a l'ajornéde.  
 Longc un alter belement l'enterrèrent ;  
 Molt grant honor li at li reis donéde.

*Chanson de Roland.*

2. Déclinez dans l'ancienne langue à deux cas, au singulier et au pluriel avec l'article, les mots en *italiques* qui se trouvent dans les extraits A et B.

3. Quelles sont les origines latines de *Ço, dont, pou, dedevant, rancune, aidier, cuidet, maisniède, icel, Sor, mostier, entresque* ?

4. Nous disons : " Il est plus grand que toi et moi ; moi et toi nous irons ; ui-même est venu ; son père arrive-t-il ? mon amie, ton épée." Comment, disait-on dans l'ancienne langue ? Donnez les règles qui se rapportent à ces exemples.

5. (a) Pourquoi appelle-t-on les poèmes épiques du moyen âge *chansons de geste* ? (b) Comment s'appellent les différentes parties dont elles se composent ? (c) Quel en était le nombre ordinaire de pieds ? (d) Où se trouvait la *sésure* ? (e) Qu'entendez-vous par *l'assonance* et la *rime* ? (f) Traitez brièvement la diffusion à l'étranger des *chansons de geste* de la France.

6. (a) Faites une courte analyse de la chanson de Roland.

(b) Indiquez-en la base historique.

7. (a) Pourquoi est-il difficile de faire une analyse des *Essais* ? (b) Donnez un aperçu général de cet ouvrage.

8. (a) Qu'avez-vous à dire du *scepticisme* de Montaigne ? (b) Pourquoi ce moraliste ne saurait être pris pour guide de la vie ?

9. Donnez une appréciation de Montaigne comme écrivain.

10. Reproduisez en français moderne :

Il n'est homme à qui il siese si mal de se mesier de parler de mémoire ; car je n'en reconnoy quasy trasse en moy ; et ne pense qu'il y en aye au monde une autre si merueilleuse en défaillance. J'ay toutes mes autres parties viles et communes, mais en cette là, je pense estre singulier et tresrare, et digne de gaigner nom et reputation. Outre l'inconvenient naturel que j'en souffre (car certes veu sa nécessité, Platon a raison de la nommer une grande et puissante déesse), si en mon país on veut dire qu'un homme n'a pas de sens, ils disent qu'il n'a point de mémoire ; et quand je me plains du défaut de la mienne, ils me reprennent et mes-croient, comme si je m'accusais d'estre insensé ; ils ne voient pas de chois entre mémoire et entendement. C'est bien empirer mon marché ! mais ils me font tort ; car il se voit par expérience, plustost au rebours, que les memoires excellentes se joignent volontiers aux jugements débiles. Ils me font tort aussi en cecy, qui ne sçay rien si bien faire qu'estre amy, que les mesmes paroles qui accusent ma maladie representent l'ingratitude ; on se prend de mon affection à ma mémoire ; et d'un défaut naturel on en fait un défaut de conscience.

*Essais de Montaigne, Ch. LV.*

## GERMAN.

FIRST YEAR, MEN. (ARTS AND APP. SCIENCE.)

WEDNESDAY, APRIL 15TH :—AFTERNOON, 2 TO 4.

*Examiner*,.....L. R. GREGOR, B.A.

VanderSmitten's German Grammar, Joynes' German Reader.

## 1. Translate :—

(a) Ueb' immer Treu' und Redlichkeit

Bis an dein kühles Grab,  
 Und weiche keinen Finger breit  
 Von Gottes Wegen ab.

Dann *wirst* du wie auf grünen Au'n  
 Durchs Pilgerleben *gehn* ;  
 Dann *kannst* du sonder Furcht und Grau'n  
 Dem Tod ins Antlitz sehn.

(b) Da grüßen ihn Vögel

Bekannt überm Meer,  
 Sie flogen von Fluren  
 Der Heimat hierher ;  
 Da duften die Blumen  
 Vertraulich um ihn;  
 Sie trieben vom Lande  
 Die Lüfte dahin.

(c) Vor alten Zeiten, als noch Engel auf Erden unter den Menschen *wanderten*, *trug es sich zu*, dasz einer derselben abends müde war und ihm die Nacht *überfiel*, ehe er zu einer Herberge kommen konnte. Nun *standen* auf dem Wege vor ihm zwei Häuser einander gegenüber, das eine grosz und schön, das andere klein und ärmlich anzusehen, und gehörte das grosze einem reichen, das kleine einem armen Manne. Da dachte der Engel : “Dem Reichen werde ich nicht beschwerlich fallen, bei ihm will ich anklopfen.”



2. Translate into German :—

- (a) I should be happy, if I were rich.
- (b) Place this chair behind the stove for me.
- (c) What have I just laid on the desk?
- (d) He asked me which of these gentlemen was my brother.
- (e) When we hastened home yesterday, it was raining heavily.
- (f) I have not used the book which you sent me.
- (g) I take the chalk and let it fall into the basket.
- (h) There was a great deal of dancing yesterday evening.
- (i) General M. rode on a black horse through the streets of Toronto.
- (j) Waiter, please bring me the vinegar and the pepper.

3. Parse the words in italics in above extracts.

4. Decline in the singular *das gelbe Gold, ein schweres Metall*.

5. (a) Turn the following sentences into the passive voice :—  
Who brought this letter? They sold the horses yesterday. (b)  
State briefly the rule which governs the employment of the  
“true passive.”

6. State as many cases as you can in which the definite article is required in German contrary to English usage.

7. Distinguish *die Bänke* and *die Banken*, *die Laden* and *die Läden*.

8. The pronoun *sich* can be employed reflexively and reciprocally. How could all ambiguity be avoided?

9. Dictation.

10. Reading.

SECOND YEAR (MEN AND WOMEN).

FIRST YEAR WOMEN.

WEDNESDAY, APRIL 15TH :—AFTERNOON, 2 TO 5.

*Examiner*,..... L. R. GREGOR, B.A.

N.B.—Questions expressed in German are to be answered in German.

Die Journalisten, Uhland's Ballads, Van der Smitten's German Grammar, N. Y. Staats-Zeitung.

1. Translate into English :—

(a) O l d e n d o r f. Mein Fräulein, ich bin nicht eingebildet, ich schlage meine Kraft nicht eben hoch an, und so weit ich mich kenne, verbirgt sich kein ehrgeiziger Drang auf dem Grund meiner Seele. Es ist möglich, daß, wie jetzt Sie, auch eine spätere Zeit unsern politischen Hader, unsere Parteibestrebungen und was damit zusammenhängt, sehr niedrig schätzen wird. Es ist möglich, daß unser ganzes Arbeiten resultatlos bleibt; es ist möglich, daß vieles Gute, das wir erschnen, sich, wenn es erreicht ist, in das Gegenteil verkehrt, ja, es ist höchst wahrscheinlich, daß mein eigener Antheil an dem Kampfe oft peinlich, unruhmlich und durchaus nicht das sein wird, was man eine dankbare Thätigkeit nennt; aber das alles darf mich nicht abhalten, dem Kampf und Ringen der Zeit, welcher ich angehöre, mein Leben hinzugeben; denn es ist trotz alledem dieser Kampf das Höchste und Edelste, was die Gegenwart hervorbringt.

(b) B o l z. Das ist eine Entschuldigung, aber keine gute. Erfinde deine eigenen Geschichten, wozu bist du Journalist? Mache ein kleines „Eingefandt,“ z. B. eine Betrachtung über Menschenleben im Allgemeinen, oder über das Umherlaufen von Sündern außer der Straße, oder suche eine haarsträubende Geschichte heraus, vielleicht einen Mordmord aus Höflichkeit, oder wie ein Hamster sieben schlafende Kinder erbitzen hat, oder so etwas.—Es giebt so Vieles, was geschieht, und so ungeheuer Vieles, was nicht geschieht, daß es einem ehrlichen Zeitungsschreiber nie an Neuigkeiten fehlen darf.

2. (a) Mr. B. lost a great deal of time last month. He is studying more industriously now. He seems to wish to pass his examination. I believe he would not work at all, if something did not force him to it. He began to work just five days ago. He can't finish his mathematics before the examination. If he fails (durch'fallen), he will be obliged to study another year. It will have been a good lesson for him, if it makes him more prudent in future.

(b) Have you a good memory (das Gedächtnis)? No, I read everything in my brother's library, unfortunately I forget almost as fast as I read. That is a pity (Schade). Perhaps you read too quickly. You like reading, of course (natürlich). Yes, I spend the happiest days of my life in the library. I am sorry that I do not know French. I should like to be able to read a French book which my brother received yesterday from Paris.

3. By what cases can "point of time" be rendered? Give a sentence in illustration of each.

4. Give the German equivalents of the following expressions : three sevenths, the seventy-seventh, of seven kinds, seventhly, seven and a half days, seven minutes to seven, on the seventh day, a quarter to seven.

5. Distinguish *kennen* from *wissen* in meaning and application.

6. When do you use the strong form of the past participle of the modal auxiliaries?

7. What is the fundamental idea contained in the verb *sollen*? Give a sentence in illustration.

8. Give the three principal parts of the following verbs : bring, remain, become, send out, pay, seem, drive, drink (as beasts), spoil, swim, hide, take.

#### FOR SECOND YEAR ONLY.

9. Und wie vom Sturm zerstoßen, ist all der Hörer Schwarm ;  
Der Jüngling hat verröthelt in seines Meisters Arm.

Der schlägt um ihn den Mantel und setzt ihn auf das Rosz,  
 Er bind't ihn aufrecht feste, verläszt mit ihm das Schloz.

10. Translation at sight (Das Reichstags-Jubiläum, N. Y. Staats-Zeitung.)

Translate :—

Der Reichstagspräsident fuhr dann fort : „Im Namen eines solchen Volkes danke ich ihm, welcher das Haupt aller unserer Fürsten ist. Wir Alle danken ihm dafür, daß er unsere nationale Einheit und Unabhängigkeit aufrecht hält. Das ist in den jetzigen Friedenszeiten die heiligste Pflicht, wie sie es in früheren Zeiten des Krieges war. Lassen Sie uns trinken auf das Wohl und Gedeihen von Kaiser und Reich.“

Der Reichskanzler Fürst Hohenlohe gab dem Gefühle dankbarer Anerkennung der Verdienste der Männer Ausdruck, welche unter der Führung des großen Kaisers Deutschland zum Siege und zur Einheit geführt haben. Er gedachte der Verdienste des Königs von Sachsen, Kaiser Friedrich's, des Grafen v. Moltke und der andern Paladine der großen Zeit.

11. Was wissen Sie von Freytag's Romanen.

12. Wie unterscheiden sich die trennbaren Komposita von den untrennbaren (1) in Bezug auf die Betonung ? (2) —in Bezug auf die Stellung des *zu* im Infinitiv ?

#### FOR FIRST YEAR ONLY.

9. What do you know about the mood and tense of indirect statements and indirect questions ?

10. Translate :—Which are your sisters. Explain the construction.

11. (a) Turn the following sentences into the passive voice :—  
 Who brought this letter ? They sold the horses yesterday. (b)  
 State briefly the rule which governs the employment of the auxiliary *werden* in the passive.

12. The pronoun *sich* can be employed reciprocally and reflexively. How could all ambiguity be avoided?

### THIRD YEAR.

FRIDAY, APRIL 17TH:—AFTERNOON, 2 TO 5.

*Examiner*,..... L. R. GREGOR, B.A.

N.B.—Questions expressed in German are to be answered in German.

#### 1. Translate:—

(a) Tellheim. Melde mich ihr! — Sprich für mich, Franziska! — Ich folge dir sogleich! — Was werde ich ihr sagen? — Wo das Herz reden darf, braucht es keiner Vorbereitung. — Das einzige möchte eine studierte Wendung bedürfen: ihre Zurückhaltung, ihre Bedenklichkeit, sich als unglücklich in meine Arme zu werfen; ihre Besessenheit, mir ein Glück vorzuspiegeln, das sie durch mich verloren hat. Dieses Mißtrauen in meine Ehre, in ihren eignen Wert vor ihr selbst zu entschuldigen, vor ihr selbst — Vor mir ist es schon entschuldigt! — Ha! hier kommt sie.—

(b) Werner. Dem Soldaten geh's in Winterquartieren wunderlich. Da hat er nichts zu thun und pflegt sich und macht vor Langeweile Bekanntschaften, die er nur auf den Winter meint, und die das gute Herz, mit dem er sie macht, für zeitlebens annimmt. Huch ist ihm denn ein Ringelchen an den Finger practiciert; er weiß selbst nicht, wie es dran kommt. Und nicht selten gab' er gern den Finger mit drum, wenn er es nur wieder los werden könnte.

(c) Das Fräulein. O, mein Nechthaber, so hätten Sie sich auch gar nicht unglücklich nennen sollen. Ganz geschwiegen, oder ganz mit der Sprache heraus. — Eine Vernunft, eine Nothwendigkeit, die Ihnen mich zu vergessen befiehlt? — Ich bin eine große Liebhaberin von Vernunft; ich habe sehr viel Ehrerbietung für die Nothwendigkeit. — Aber lassen Sie doch hören, wie vernünftig diese Vernunft, wie notwendig diese Nothwendigkeit ist.

(d) Aber dadurch allein glaubte der Herzog sein Werk noch nicht gegen alle Zufälle sicher gestellt zu haben. Es war zu erwarten dasz der Feind nichts unversucht lassen würde, den mittlern und schwächsten Teil der Brücke durch die Gewalt seiner Maschinen zu sprengen; diesem vorzubeugen, warf er längs der Schiffbrücke und



in einiger Entfernung von derselben noch eine besondere Schutzwehr auf, welche die Gewalt brechen sollte, die auf die Brücke selbst möchte ausgeübt werden. Dieses Werk bestand aus dreiunddreissig Barken von beträchtlicher Grösze, welche in einer Reihe, quer über den Strom hingelagert, und je drei und drei mit Mastbäumen aneinander befestigt waren, so dasz sie elf verschiedene Gruppen bildeten.

2. (a) Erzählen Sie die Vorfabel der Minna von Barnhelm."

(b) Welches sind die nationalen Elemente dieser Komödie?

3. Comment on : (a) Lillo and Liefkenshoek. (b) Federico Giansibelli. (c) Playten. (d) Utrechter Union. (e) Wallonea. (f) Describe the great bridge.

Comment on the following : (g) Equipage, (h) Heraklius, (i) wo mir recht ist, (j) *Tellheim* — "dasz meine Pistolen nicht vergessen werden," (k) Ihro Gnaden, (l) Korporals, (m) die Weisen aus dem Morgenlande.

4. In welchem Versmasz ist Klopstock's *Messias* geschrieben? Wo ist der Schauplatz des ersten Gesanges? Was für Charaktere führt uns Klopstock im Laufe des Gedichtes vor?

5. Geben Sie den Inhalt von Wieland's *Oberon* an. Erwähnen Sie einige Werke seiner ersten Periode. In welchem Verhältnisz stand Wieland zu der herzoglichen Familie von Sachsen-Weimar?

6. (a) Was ist der vollständige Titel des "Laokoon."

(b) Warum musz der Dichter anders verfahren als der Bildhauer.

7. (a) Erzählen Sie die Fabel der *Emilia Galotti*.

oder (b) Was wissen Sie von Lessing's erster Komödie?

8. Wo hat Herder den Stoff zu seinem "Cid" hergenommen.

9. Translate into German :

(a) I could have sold my house last year, but now it is impossible, nobody wants to buy it. What ought I to do? I must go to the country next week. I should like to rent it (vermieten) before I leave. Might I ask where you are going? I shall not go very far in (bei) such weather. The thermometer is below zero.

(b) May I offer you a cup of coffee? Thank you, I don't take coffee; I prefer tea. Let me tell you that you are drinking tea which is said to have cost one hundred and fifty dollars a pound. How do you like it? I promised you something new, have I kept my word? Of course I received it as a present.

10. Distinguish *ü'bersetzen* and *übersetz'en*. Compose sentences illustrating the distinction. State the principle which underlies this class of compound verbs.

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### B.A. ORDINARY.

FRIDAY, APRIL 17th :—AFTERNOON, 2 TO 5.

*Examiner*, . . . . . L. R. GREGOR, B.A.

N.B.—Questions expressed in German are to be answered in German.

1. (a) Wallenstein.

Des unverführten Willens mir bewußt,  
 Gab ich der Laune Raum, der Leidenschaft —  
 Kühn war das Wort, weil es die That nicht war.  
 Seht werden sie, was planlos ist geschehn,  
 Weitsehend, planvoll mir zusammenknüpfen,  
 Und was der Zorn, und was der frohe Mut  
 Mich sprechen ließ im Ueberfluß des Herzens,  
 Zu künstlichem Gewebe mir vereinen  
 Und eine Klage furchtbar drauß bereiten,  
 Dagegen ich verstummen muß.

(b) Gordon.

Und habe treu gethan, wie ihr mich hießt,  
 Die Festung unbedenklich ihm geöffnet,  
 Denn mir befiehlt ein kaiserlicher Brief,  
 Nach eurer Ordre blindlings mich zu fügen.  
 Jedoch verzeiht! als ich den Fürsten selbst  
 Nun sah, da fing ich wieder an zu zweifeln.  
 Denn wahrlich! nicht als ein Geächteter  
 Trat Herzog Friedland ein in diese Stadt.  
 Von seiner Stirne leuchtete wie sonst  
 Des Herrschers Majestät, Gehorjam fordernd,  
 Und ruhig, wie in Tagen guter Ordnung,

Nahm er des Amtes Rechenschaft mir ab.  
 Ventfelig macht das Mißgeschick, die Schuld,  
 Und schmeichelnd zum geringern Manne pflegt  
 Gefallner Stolz herunter sich zu beugen;  
 Doch sparsam und mit Würde wog der Fürst  
 Mir jedes Wort des Beifalls, wie der Herr  
 Den Diener lobt, der seine Pflicht gethan.

(c) Hatte man in einer solchen patriotischen Beschränkung kaum ein halbes Jahr hingebracht, so traten schon die Messen wieder ein, welche in den sämtlichen Kinderköpfen jederzeit eine unglaubliche Gährung hervorbrachten. Eine durch Erbauung so vieler Buden innerhalb der Stadt in weniger Zeit entspringende neue Stadt, das Wogen und Treiben, das Abladen und Auspacken der Waren, erregte von den ersten Momenten des Bewußtseins an eine unbezwinglich thätige Neugierde und ein unbegrenztes Verlangen nach kindischem Besitz, das der Knabe mit wachsenden Jahren bald auf diese, bald auf jene Weise, wie es die Kräfte seines kleinen Ventels erlauben wollten, zu befriedigen suchte.

2. Comment on the following :—

(a) Sie thäten sich just gegen Magdeburg rüsten. (b) Der Tilly überlebte seinen Ruhm. (c) "Friszt den Ochsen lieber als den Ochsenstirn." (d) Drum kann er den Hahn nicht hören krähn. (e) Leipziger Fatalität. (f) Ja, dasz er *fest* ist, das ist kein Zweifel. (g) Da kommen die Prager. (h) Bramarbas. (i) Sie sind ihm am Hofe so nicht grün.

(j) Describe the character of the Wachtmeister.

(k) What was the *Kapuzinerpredigt* modelled on?

(l) Explain the scanning of:

Wir denken nicht nach. Das ist deine Sache,

(and) Die Kaiserin ehrt Ihr Unglück, öffnet Ihnen.

3. Comment on (a) the "Pfarreisen," (b) Batzen (Quote a line from Wallenstein's Lager in which the word is employed), (c) der Frankfurter Römer, (d) das Pfeiffergericht, (e) Shalmei.

4. In welchem Versmasz ist Klopstock's *Messias* geschrieben? Wo ist der Schauplatz des ersten Gesanges? Was für Charaktere führt uns Klopstock im Laufe des Gedichtes vor?

5. Geben Sie den Inhalt von Wieland's *Oberon* an. Erwähnen Sie einige Werke seiner ersten Periode. In welchem Verhältnisz stand Wieland zu der herzoglichen Familie von Sachsen-Weimar?

6. (a) Was ist der vollständige Titel des "Laokoon."

(b) Warum musz der Dichter anders verfahren als der Bildhauer.

7. Erzählen Sie die Fabel der Emilia Galotti.

oder Was wissen Sie von Lessing's erster Komödie?

8. Wo hat Herder den Stoff zu seinem "Cid" hergenommen.

### B. A. AND THIRD YEAR HONOURS.

MONDAY, APRIL 6TH:—9 A.M. TO 1 P.M.

*Examiner*,..... L. R. GREGOR, B.A.

Faust, Hermann and Dorothea.

N.B.—Questions expressed in German are to be answered in German.

1. Translate in Hermann und Dorothea:—

(a) in Polyhymnia, Aber es saszen....vernünftig.

(b) in Melpomene, Also gingen....Sturm dräut.

2. Comment on (a) Bäume der Freiheit. (b) Polyhymnia, (c) Burgemeister.

3. Give the name and substance of the story on which Goethe's Hermann und Dorothea was based.

4. Translate in Faust:—

(a) Ich grüße dich....dem Morgen zugebracht. 337-384 (Schröer.)

(b) Denkt nur....verdauen. 2460-2487.

5. State any facts which support the view that the Faust legend was a Protestant legend and that Faust was intended to be a secular counte part to Luther.

6. State briefly those elements of the Faust story which were common to all its forms prior to Lessing? How did Lessing escape from the necessity of making his hero end in Hell? What feature of Faust's character does the devil seize on in Lessing's Faust, with the confident hope of ruining him?

7. What is commonly known under the name "Urfaust"?

(or) What is known as the "grosze lücke"?

8. What reason does Goethe assign for converting the Prison Scene into metre?

(or) What purpose was the visit to the Witch's kitchen intended to serve?

9. When was (a) the "Fragment" published? (b)—the completed First Part. (c) — the completed Second Part? (d) Where was Goethe when the first thought of the Faust subject came to him? (e) Where was the scene "Hexenküche" composed? (f) When were the three introductory pieces composed? (g) Give the names of the successive *Volksbücher* on the subject of Faust. (h) In what form was the legend first introduced to the boy Goethe? (i) Who is generally regarded as the original of Gretchen?

10. Comment on (a) the name Mephistopheles (b) "und leider auch Theologie," (c) "Du, Geist der Erde, bist mir näher." (d) Wie im Eisen der Fuchs zagt ein alter Höllenluchs. (e) *Floh* rhyming with *Sohn*. (f) DIE HEXE — Seh ich doch keinen Pferdefusz. (g) "Du gabst mir den Gefährten."

11. State briefly Kuno Fischer's view of the rôle of Mephistopheles in the Urfaust.

(or the following questions.) What did Goethe say about the plan of Faust (a) in Rome? (b)—in his correspondence with Schiller in 1797? (c)—in his old age?

12. Erklären Sie die folgenden Worte aus der Zueignung.

"Wie ihr aus Dunst und Nebel um mich steigt."

(oder) Geben Sie den Inhalt des Prologs im Himmel an.

13. Was für ein Leben hat Goethe in Leipzig geführt? In welcher Scene seines "Faust" finden wir satirische Anspielungen auf die Universitätsvorlesungen? Welche Rolle hat Fräulein von Klettenberg in Goethe's Leben gespielt?



## B.A. AND THIRD YEAR HONOURS.

## GERMAN.

## LITERATURE, COMPOSITION, HEINE'S LYRICS.

MONDAY, APRIL 13TH :—MORNING, 9 TO 1.

*Examiner*, . . . . . L. R. GREGOR, B.A.

(Questions expressed in German are to be answered in German.)

1 (a) Translate into English :—

Ich bin's gewohnt den Kopf recht hoch zu tragen,  
 Mein Sinn ist auch ein bisschen starr und zähe;  
 Wenn selbst der König mir ins Antlitz sähe,  
 Ich würde nicht die Augen niederschlagen.  
 Doch, liebe Mutter, offen will ich's sagen:  
 Wie mächtig auch mein stolzer Mut sich blähe,  
 In deiner selig süszen trauten Nähe  
 Ergreift mich oft ein demutvolles Zagen.  
 Ist es dein Geist, der heimlich mich bezwinget,  
 Dein hoher Geist, der alles kühn durchdringt,  
 Und blitzend sich zum Himmelslichte schwinget?  
 Quält mich Erinnerung, dasz ich verübet  
 So manche That, die dir das Herz betrübet,  
 Das schöne Herz, das mich so sehr geliebet!

(b) Comment on Kevlaar, Muttersöhnchen, Dame d'Atour Sans-külotte.

2. Translate into German the following letter (Horning):—

In my last letter I described the little village in which I was then staying, and the beautiful scenery around it. I am now in a much larger place, where our relatives live, as you already know, but I do not like it as well here as in my former stopping place. The village was on the shore of one of the most beautiful lakes I have ever seen. However, in the town there are larger hotels and more of them, though most of the landlords are not so obliging as the one in the village. The most interesting building here is the old town hall, though St. John's church is still older. My uncle received me in a most cordial fashion. He is one of the richest men here and has the finest

house in town, but I am democratic you know, and like best to live very quietly and simply, the simpler the better. So I do not like visiting rich relatives, and shall get away from here at the earliest possible moment.

Yours truly,

M. N.

3. Geben Sie den Inhalt von "Don Sylvio," ODER von den "Abderiten" an.

4. Erläutern Sie die folgende Stelle im Literaturbrief 63: "Herr Wieland hat die äthärischen Sphären verlassen und wandelt wieder unter den Sterblichen."

5. Erklären Sie das Wort "Bardiet." Kritisieren Sie diese Klopstock'sche Neubildung. Wer ist mit dem Namen "Fanny" gemeint.

6. In welchem Verhältnisz stand Goethe zu Herder, während ihres Aufenthalts in Straszburg?

(oder) 6. Was wissen Sie von Herder's "Stimmen der Völker in Liedern"?

7. In welchem Verhältnisz stand Goethe zu der Buff'schen Familie in Wetzlar? Wie heizt und welcher Art ist das Werk, das aus Goethe's dortigen Erlebnissen entstanden ist?

8. Welchen Einflusz hat der Aufenthalt in Italien auf Goethe's künstlerische Entwicklung gehabt? Welche Werke hat er hier vollendet? Welche nur fortgeführt?

(oder) 8. Was ist die Fabel des "Torquato Tasso?" Goethe soll in diesem Stück "viel Eigenes" niedergelegt haben. Was ist mit diesen Worten gemeint?

9. Warum konnten Goethe und Schiller sich bei ihrer ersten Begegnung nicht näher treten? Bei welcher Gelegenheit kamen sie schliesslich in Verbindung mit einander?

10. Charakterisieren Sie die zweite Periode Schiller's.

(oder) 10. Was wissen Sie von Schiller's Geschichte des dreissig-jährigen Krieges?

11. Wie heissen die Verfasser der folgenden Produktionen? 1 Luise, 2 Briefe zur Beförderung der Humanität, 3 Anmut und Würde, 4 Der Gott und die Bajadere, 5 Schäfers Klagelied, 6 Das Kind der Sorge, 7 Kritik der praktischen Vernunft, 8 Siegwart, 9 Adam's Tod, 10 Der sterbende Cato, 11 Die Vögel, 12 Jery und Bätely.

THURSDAY, APRIL 9TH :—MORNING 9 TO 12.

*Examiner*,..... L. R. GREGOR, B.A.

N.B.—Questions expressed in German are to be answered in German.

1. Translate in Laokoon.

(a) Chapter IV. So grosz und schrecklich..... Geduld.

(b) Chapter VIII. So Etwas... einer Venus.

2. Translate in Nathan der Weise.

(a) Act I. Scene 3. Ein Bettler wisse..... eines Gecken  
Geck. (b) Act IV, Scene 7, Traut mir Nathan..... auch nicht  
geliebt.

3. Translate in the *Harzreise*: Je doch der ältern.... hinunter.

4. Comment on : (a) Selbstzwanziger (b) den Garaus ihm zu  
machen. (c) Nur musz der Knorr den Knubben hübsch vertragen.  
(d) deine Siebensachen. (e) Siedelei auf Thabor. (f) Mamalucken.  
(g) Kahira (h) die glatten Steme. (i) *Saladin*. Ein Kleid, ein  
Schwert, ein Pferd — und einen Gott.

5. Where did Lessing get the Parable of the three rings. Show  
how he spiritualized and deepened it. What were the circumstances  
which prompted Lessing to write his "Nathan."

6. Welchen Einfluss hat der "Laokoon" auf die zeitgenössische  
Litteratur geübt? Wo schreibt sich der Titel des Werkes her?  
Worin findet Lessing den Unterschied zwischen den bildenden und  
den redenden Künsten?

7. Comment on (a) Börne, (b) Ratskeller, (c) altklug, (d) Kom-  
pendien, (e) Philister, (f) hochgelahrt, (g) hochgebenedeit, (h)  
Delinquententracht, (i) Karyatiden, (j) des Nachts, (k) Welschland.

8. Give an account of Heine's life up to the time of his going to  
reside in Paris.

HEBREW.

ORDINARY B.A.

WEDNESDAY, 1ST APRIL :—9 TO 12 A.M.

*Examiner*, ..... D. COUSSIRAT, B.A., B.D., D.D.  
OFFICIER d'ACADEMIE,

1. Translate into English :—Isaiah, IX, 6-8.

כִּי־יֵלֵךְ יִלְד־לָנוּ בֶן נִתֵּן־לָנוּ וְתָהִי הַמִּשְׁרָה עַל־שִׁכְמֹו  
וַיִּקְרָא שְׁמוֹ פֶּלֶא יוֹעִיץ אֶל גִּבּוֹר אֲבִי־עַד שֶׁר־שָׁלוֹם:  
לְסֹרֶבֶה הַמִּשְׁרָה וּלְשָׁלוֹם אֵין קֵין עַל־כִּסֵּא דָוִד  
וְעַל־מַמְלַכְתּוֹ לְהַכִּין אֹתָהּ וּלְסַעֲדָהּ בְּמִשְׁפָּט וּבְצִדְקָה  
מֵעַתָּה וְעַד־עוֹלָם קִנְיָתָהּ יִהְיֶה צְבָאוֹת תַּעֲשֶׂה־נָּאת :

(a) Write the inflection of the Pual of יֵלֵךְ.

(b) Is פֶּלֶא a construct state in that section ?

(c) Parse לְסֹרֶבֶה

(d) Point and translate the note :—סְתוּמָה בִּאֲמִצֵּעַ תִּיבָה

(e) Parse לְהַכִּין. Why is there a long vowel under ה ?

(f) What are the peculiarities of ם in ע״ו verbs ?

(g) How is the קִנְיָתָהּ יִהְיֶה to be understood ?

(h) Translate into Hebrew :—The Kingdom of David shall be established with justice from henceforth and forever.

2. Translate into English :—Daniel XI, 36-38.

וַעֲשֶׂה כְּרִצְנוֹ הַמֶּלֶךְ וַיְתְּרוּמָם וַיִּתְּגַדֵּל עַל־כָּל־אֱלֹהִים וְעַל־  
אֱלֹהִים יִדְבֹּר גִּפְלָאוֹת וְהַצְלִיחַ עַד־כָּלָה זֶעַם כִּי־נִחְרָצָה  
נַעֲשֶׂתָהּ: וְעַל־אֱלֹהֵי אֲבֹתָיו לֹא יִבִּין וְעַל־חֻמַּת נָשִׁים  
וְעַל־כָּל־אֱלֹהֵי לֹא יִבִּין כִּי עַל־כָּל יִתְגַּדֵּל: וְלֹא־אֱלֹהֵי

מַעֲזִים עַל-כֵּנוֹ יִכְבֹּד וְלֹא־לֹהֶ אֲשֶׁר לֹא-יִדְעֵהוּ אֲבֹתָיו  
יִכְבֹּד בְּזֶהָב וּבְכֶסֶף וּבֶאֱבֶן יִקְרָה וּבַחֲמֻדוֹת:

(a) Parse and explain נִחְרָצָה.

(b) Write a note on———מַעֲזִים.

(c) Point out a postpositive accent in that section.

(d) Write the inflection of the singular of כֶּסֶף.

(e) To what historical facts does that section refer?

(f) Translate into Hebrew:—They do not regard the God of their fathers, for they magnify themselves above all.

3. Translate into English Psalm XXXVIII, 15-21:—

וְאֵהִי בְּאִישׁ אֲשֶׁר לֹא-שָׁמַע וְאִין בְּפִי תוֹכַחֹת: כִּי-לֹךְ  
יְהִי הוֹחֵלְתִּי אֶתְּהָ תַעֲנֶה אֶדְנִי אֱלֹהִי: כִּי-אָמַרְתִּי  
פֶּן-יִשְׁמַחֲדִלִי בְּמוֹט רַגְלִי עָלַי הִגְדִּילוּ: כִּי-אֲנִי לְצֹלַע  
נָכוֹן וּמִכְאוֹבִי נִגְדִּי רַחֲמִיד: כִּי-עֲוֹנִי אֶגִּיד אֶדְרֹאג  
מִחֻטָּאתַי: וְאֵיבֵי חַיִּים עֲצָמוּ וְרַבּוֹ שָׁנְאֵי יִשְׁקָד: וּכְיִשְׁלָמִי  
רָעָה תַּחַת טוֹבָה יִשְׁטַנּוּנִי תַּחַת רְדוּפֵי-טוֹב:

(a) Parse fully (1) וְאֵהִי, (2) הוֹחֵלְתִּי, (3) בְּמוֹט.

(b) Write the inflection of עֵוֹן (sing. and plural, with one light and one grave suffix).

(c) What reading is it proposed to substitute to חַיִּים?

(d) Parse נִגְדִּי רַחֲמִיד and explain the note קרי נ"א רדפי.

(e) Translate into Hebrew:—The Lord my salvation made haste to my help.

4. Mark the use of the Jussive and Cohortative in Hebrew.

5. Explain the origin of the Mishna and the Gemara:—Name and describe briefly the סְדָרִים of the Mishna.



INTERMEDIATE EXAMINATION.

Examiners,..... { D. COUSSIRAT, B.A. ; B.D. ; D.D. ;  
[OFFICIER d'ACADEMIE.  
REV. A. T. LOVE, B.A., B.D.

[N.B.—Students of McGill will not answer question I.—Students of Morrin College will not answer questions 7 and 8.]

1. Translate literally (Genesis IV. v. 7-9.)

הָלוֹא אִם-תִּטֵּיב שְׂאתָ וְאִם לֹא תִטֵּיב לִפְתַּח חַטָּאת  
רִבֵּן וְאֵלֶיךָ תִּשׁוּקָתוֹ וְאַתָּה תִּמְשָׁל-בּוֹ : וַיֹּאמֶר קַן  
אֶל-הָבֶל אָחִיו וַיְהִי בִהְיוֹתָם בַּשָּׂדֶה וַיִּקֶּם קַן אֶל-הָבֶל  
אָחִיו וַיַּהַרְגֵהוּ : וַיֹּאמֶר יְהוָה אֶל-קַן אֵי הָבֶל אָחֶיךָ  
וַיֹּאמֶר לֹא יָדַעְתִּי הִשְׁמַר אָחִי אֲנֹכִי :

(a) Parse fully (1) תִּטֵּיב (2) וַיִּקֶּם (3) יָדַעְתִּי

(b) Remark on (1) הָלוֹא אִם תִּטֵּיב שְׂאתָ

(2) הִשְׁמוּ אָחִי אֲנֹכִי

2. Translate literally (Genesis VII, v. 22-24.)

כָּל אִשָּׁר נִשְׁמַת-רוּחַ חַיִּים בְּאֶפְיוֹ כָּל אֲשֶׁר בַּחַרְבָּה  
מָתוּ : וַיִּמַּח אֶת-כָּל הַיָּקוּם אֲשֶׁר עַל-פְּנֵי הָאֲדָמָה  
מֵאָדָם עַד-בְּהֵמָה עַד-רֶמֶשׂ וְעַד-עוֹף הַשָּׁמַיִם וַיִּמָּחוּ  
מִן-הָאָרֶץ וַיִּשְׁאַר אֲדָם-וְנֹחַ וְאִשָּׁר אִתּוֹ בַּתְּבָה :

(a) Parse (1) נִשְׁמַת (2) וַיִּמָּחוּ (3) בַּתְּבָה, explaining the dagesh lene in ב.

(b) Explain the form וַיִּמַּח.

3. Translate literally (Genesis VIII, v. 1-4.

וַיִּזְכֹּר אֱלֹהִים אֶת־נֶחַ וְאֶת כָּל־הַבְּהֵמָה  
אֲשֶׁר אִתּוֹ בַּתְּבָה וַיַּעֲבֵר אֱלֹהִים רוּחַ עַל־הָאָרֶץ וַיִּשְׁכְּבוּ  
הַמַּיִם: וַיִּסְכְּרוּ מַעֲיֵנֶת הַתְּהוֹם וְאֶרֶבַת הַשָּׁמַיִם וַיִּבְלֹא  
הַנָּשָׁם מִן־הַשָּׁמַיִם: וַיִּשְׁבוּ הַמַּיִם מֵעַל הָאָרֶץ הַלֹּךְ  
וַיָּשׁוּב וַיִּחַסְרוּ הַמַּיִם מִקְצֵה חֲמִשִּׁים וּמֵאֵת יוֹם:

(a) Parse וַיַּעֲבֵר. Name the accents and point out their use.

(b) Write the inflection of the Kal Imperfect of יָשַׁב.

(c) What is the primary meaning of תְּהוֹם?

(d) Write the inflection of the Hiphil Imperfect of יָשׁוּב.

(e) State the principle of Syntax applied in הַלֹּךְ וַיָּשׁוּב.

(f) Attach a light and a grave suffix to the singular and plural of חָדָשׁ.

(g) Translate into Hebrew:—He rested on the seventh day.

4. Translate literally (Exodus XX, v. 23-25:—

לֹא תַעֲשֶׂוּן אֵתִי אֱלֹהִי כֶסֶף וְאֱלֹהִי זָהָב לֹא תַעֲשֶׂוּ  
לָכֶם: מִזְבֵּחַ אֲדָמָה תַעֲשֶׂה־לִּי וְזִבְחַת עֲלִיו אֶת־עֹלֹתֶיךָ  
וְאֶת־שְׁלֹמֶיךָ אֶת־צֹאנֶךָ וְאֶת־בְּקָרְךָ בְּכָל־הַמָּקוֹם אֲשֶׁר  
אֶזְכִּיר אֶת־שְׁמִי אֲבֹא אֵלֶיךָ וּבִרְכִיתִּיךָ: וְאִם־מִזְבֵּחַ  
אֲבָנִים תַעֲשֶׂה־לִּי לֹא־תִבְנֶנּוּ אֶתְהֶן גִּזִּית כִּי חֲרָבָה  
הַנִּפְתָּ עֲלֶיהָ וְתִהְלָלָה:

(a) Parse (1) אֲבָנִים (2) הַנִּפְתָּ.

(b) Explain the נ in תַעֲשֶׂוּן.

- (c) What is the difference between אָמַר and דִּבֶּר ?
- (d) What is the plural of יָשָׁם ?
- (e) Are the vowels changed in בִּרְכֵתִיךָ by the addition of the suffix ?
- (f) Attach a light and a grave suffix to the singular and plural of עוֹלָם.
- (g) Inflect the perfect Hiphil of יָלַד.
- (h) Mention the chief peculiarities exhibited in פ guttural verbs
5. Translate into Hebrew :---
- (1) God spoke to the children of Israel and blessed them.
- (2) They made gods of silver and did not remember the sabbath [day.
- (3) Thy voice I heard in the garden.
- (4) The man will serve the ground whence he was taken.
6. Write a note explaining principle of Syntax on שְׁלֹשָׁה בָּנִים.
7. Point and translate :—(1) וַחֲצִיזוּ סִכּוּם פְּסוּקֵי דִסְפֵר
- (3) וּסְדְרֵיו.
8. Explain the signs פִּנְפָּה and סִסְס found in the תּוֹרָה.

FIRST YEAR.

WEDNESDAY, 1ST APRIL :—9 TO 12 A.M.

Examiner,..... D. COUSSIRAT, B.A., B.D., D.D.,  
OFFICIER d'ACADEMIE

1. Translate into English :—

וַיֹּאמֶר אֱלֹהִים תִּרְשָׁא הָאָרֶץ דָּשָׂא עֵשֶׂב מִזֵּרִיעַ זֶרַע  
עֵץ פָּרִי עֹשֶׂה פֶרִי לְמִינוֹ אֲשֶׁר זֶרְעוּבּוּ עַל-הָאָרֶץ  
וַיְהִי-כֵן: וַתִּצֵּא הָאָרֶץ דָּשָׂא עֵשֶׂב מִזֵּרִיעַ זֶרַע לְמִינֵהוּ  
וַעֵץ עֹשֶׂה-פֶרִי אֲשֶׁר זֶרְעוּבּוּ לְמִינֵהוּ וַיֵּרָא אֱלֹהִים  
כִּי-טוֹב :

- (a) Name and point out the use of the accents in the first verse.  
 (b) Parse וַיֹּאמֶר. Explain the change of vowels in that word.  
 (c) Parse תְּרִשָּׂא. Explain the patach, the shewa and the daghesh.  
 (d) Root of זָרַע. To what class of nouns does that word belong?  
 (e) Explain the nature of the vowels and the daghesh in עֵשָׂה פָּרִי  
 (f) What is the origin of ך in תּוֹצֵא?  
 (g) Translate into Hebrew:—The seed in which is fruit was good.  
 2. Translate into English:—

וַיִּבֶן יְהוָה אֱלֹהִים אֶת־הַצֶּלֶע אֲשֶׁר־לִקַּח מִן־הָאָדָם  
 לְאִשָּׁה וַיִּבְרָא אֱלֹהִים הָאָדָם וַיֹּאמֶר הָאָדָם זֶה הַפֶּעַם  
 עָצָם מֵעֲצָמִי וּבָשָׂר מִבָּשָׂרִי לְזָאת יִקְרָא אִשָּׁה כִּי מֵאִישׁ  
 לִקְחָהּ־זֹאת:

- (a) Parse and analyze וַיִּבֶן. What are the nouns derived from the root?  
 (b) Parse מֵעֲצָמִי. Write the form in the singular and plural. What are the name and use of the accent?  
 (c) Parse לִקְחָהּ. Transliterate the word. Explain the-over ק. Give the Kal Infinitive construct of that verb.  
 (d) Plural of אִישׁ and of אִשָּׁה.  
 (e) Translate into Hebrew:—This is the woman whom God created from the man.

3. Translate into English:—

מִן הַגִּיד לָךְ כִּי עִירָם אַתָּה הַמִּן־הָעֵץ אֲשֶׁר צִוִּיתִיךָ  
 לֵבִלְתִּי אֲכַל־מִמֶּנּוּ אֲכַלְתָּ: וַיֹּאמֶר הָאָדָם הָאִשָּׁה אֲשֶׁר  
 נָתַתָּה עִמָּדִי הוּא נִתְּנָה־לִּי מִן־הָעֵץ וָאֲכַל:

- (a) Parse **הַגִּיד** Explain the nature of the vowels.
  - (b) Inflect the Hiphil Imperfect of **פָּקַד**.
  - (c) Parse **צִוְתִּיךָ**. Does the addition of the suffix produce any change of vowels?
  - (d) Transliterate **אָכַל**.
  - (e) Translate into Hebrew :—He told the man that he was good. Hast thou eaten fruit from the tree of lives?
4. Point and translate :—
- וּמַעֲיֵן הָרַעְתָּ טוֹב וְרַע לֹא תֹאכַל מִמֶּנּוּ כִּי יוֹם  
אֲכַלךָ מִמֶּנּוּ מוֹת תָּמוּת.**
5. Inflect the Niphal Imperfect of **פָּרַד**.
  6. Give a tabular view of the Piel of **קָטַל**.
  7. Reading.

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HONOUR EXAMINATIONS.

THIRD YEAR.

HEBREW.

THURSDAY, APRIL 9TH :—9 TO 12 A. M.

*Examiner*,..... D. COUSSIRAT, B.A., B.D., D.D.,  
OFFICIER d'ACADEMIE.

1. Translate literally Genesis XLIX, 8-12 inclusive.
- (a) Explain fully the Masoretic note in verse 8.
- (b) Parse (1) **יִשְׁתַּחֲוּוּ** (2) **יִהְיֶימֶנּוּ**. Account for every vowel and apparent irregularity of forms.
- (c) Inflect the Hiphil perfect of **קוּם**.
- (d) Write an explanatory note on **שִׁילָה**.



2. Translate literally Ecclesiastes VI, 7-12.

(a) Remark on the various meanings of נֶפֶשׁ, specially in verse 7.

(b) Make a note on רְעוּת רוּחַ.

(c) Point out the Aramaisms found in that section.

(d) Compare the style of Ecclesiastes and that of Isaiah.

(e) How do you explain the apparent materialistic teaching of Ecclesiastes ?

3. Translate Isaiah LII, 13-15 and LX, 15 17, inclusive.

(a) Parse (1) יִיָּהּ, and discuss its probable meaning, (2) עֲבָדֵי.

To whom do those words apply ? (3) וְשִׁנּוּאָהּ.

(b) Make grammatical and historical notes on section LII, 13 to 15.

4. Name the Assyrian Kings referred to in Isaiah (with dates).

5. What is the general theme of Isaiah's prophecy in chapters 40-46 ?

6. Quote a few words or forms of expression used repeatedly in chapters 40-46, but never found in the rest of the book. What is to be inferred from that fact ?

## HONOUR EXAMINATIONS.

### THIRD YEAR.

#### HEBREW.

#### ARAMAIC.

MONDAY, APRIL 13TH:—MORNING, 9 TO 12 A.M.

*Examiner*...D. COUSSIRAT, B.A., B.D., D.D., OFFICIER d'ACADÉMIE.

1. Translate Daniel VI, 1-5 inclusive.

(a) Point and translate the Masoretic notes attached to that section.

(b) Make notes on (1) דְּרִישׁ (2) דְּנִיָּאל.

(c) What is the plural of בָּר ?

(d) State the rules of the numerals as applied in this passage.

(e) Parse (1) יְהִבִּין (2) נֹזֵק (3) עֲשִׂיתָ.

(f) Inflect the Aphel perfect of קוּם.

(g) Inflect the plural of מַלְכוּ.

(h) Explain why the book of Daniel was placed among the Hagiographa, when the canon of the Old Testament was formed

2. Translate Ezra VII, 21-24 inclusive.

(a) Parse (1) מְהוֹרָעִין (2) פִּלְחִי.

(b) Make notes on אֶרְתַּחְשֶׁסְתָּא (2) עֲזָרָא (3) נְתִינִיא.

(c) Inflect the singular of כָּהֵן.

3. Translate Targum of Onkelos, Genesis VI, 3, and compare the Chaldee with the corresponding Hebrew text.

4. Translate Targum of Jonathan, Ruth II, 11-13 inclusive.

(a) What are the characteristic features of that passage?

(b) Point out the differences between the style of Onkelos and that of Jonathan.

5. State what is known of Onkelos and Jonathan Ben Uzziel.

#### HONOUR EXAMINATIONS.

#### THIRD YEAR.

#### HEBREW COMPOSITION AND TRANSLATION AT SIGHT.

FRIDAY, APRIL 10TH :—MORNING, 9 TO 12.

*Examiner*,..... J. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

1. Translate at sight : Joel I, 1-7 and 15-17 inclusive.

2. Translate into Hebrew :—Ask ye now of the days that are past, since the day that God created man upon the earth, and from the one end of heaven unto the other, whether there has been any such thing as this

great thing is, or has been heard like it? Did ever people hear the voice of God speaking out in the midst of the fire, as ye have heard, and live? Or hath God assayed to go and take him a nation from the midst of a nation, by trials, by signs, and by wonders, and by war, and by a mighty hand, and by a stretched out arm, and by great terrors, according to all that the Lord your God did for you before your eyes? Unto you it was shown that ye might know that the Lord is God; there is none beside him, Out of heaven he made you to hear his voice; and upon earth he made you to see his great fire. Ye shall keep his statutes and his commandments, that it may go well with you, and with your children, and that ye may prolong your days upon the land, which the Lord your God giveth you for ever.

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### HONOUR EXAMINATIONS.

#### THIRD YEAR.

#### SAYCE'S ORIGIN AND GROWTH OF RELIGION.

WEDNESDAY, APRIL 22ND :—MORNING, 9 TO 12.

*Examiner*,.....D. COUSSIRAT, B A., B.D., D.D., OFFICIER D'ACADÉMIE.

Write on the following subjects :—

1. Origin of the names of Moses, Joseph, Saul, David and Solomon.
2. Comparison between Bel-Merodach and Yahveh.
3. The Babylonian gods Ea, Mul-lil, Adar.
4. The seven wicked spirits of Babylonia.
5. The purer side of Istar-worship.
6. The Babylonian Prometheus.
7. The Chaldean Rig-Veda.
8. The penitential psalms.
9. Views of the future state in the sacred books of Chaldaea.
10. Babylonian Cosmological systems.

HONOUR EXAMINATIONS.

THIRD YEAR.

LENORMANT'S BEGINNINGS OF HISTORY.

MONDAY, APRIL 20TH :—MORNING, 9 TO 12.

*Examiner*,.....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE

Write on the following subjects :—

1. Various original versions that have come down to us of the Chaldeo-Assyrian Genesis.

2. Conception of the Edenic felicity of the first men among the Aryan nations.

3. The tree of life related to the Soma or Haoma plant.

4. The serpent in the religious symbolism of antiquity.

5. Universality of the legends which connect the foundation of a city with a fratricide.

6. Theory of Oppert upon the figures of the antediluvian period, as they stand in the Hebrew text of Genesis.

7. The *Gibborim* of the Biblical narrative.

8. In what consists the originality of the Biblical account of the giants and heroes.

9. Translation of the original account of the Chaldean traditions of the Deluge, discovered by G. Smith.

10. Traditions of the Celtic nations on the Deluge.

## NATURAL SCIENCE.

## FACULTY OF ARTS.

## FIRST YEAR.

## CHEMISTRY.

THURSDAY, APRIL 16TH :—MORNING, 9 TO 12.

*Examiners*, ..... { B. J. HARRINGTON, M.A., PH.D.  
NEVIL NORTON EVANS, M.A.Sc.

1. What are reducing agents : Give examples, illustrating their action by means of equations.
2. What takes place when copper and strong sulphuric acid are heated together ? Give the equation representing the reaction. and the properties of the gas produced.
3. Give the formulæ of *five* of the following compounds : sodium hypochlorite, borax, Glauber's salt, orthosilicic acid, bismuth nitrate, calcium hydroxide, green vitriol.
4. What is gunpowder ? Show by means of an equation the principal chemical changes that occur when it is ignited.
5. Describe Marsh's test for arsenic, giving a drawing of the apparatus.
6. Explain carefully the statement, "The properties of the elements are periodic functions of their atomic weights," and illustrate what you mean by an example.
7. How is lime-water prepared ?
8. Describe the ammonia-soda process, illustrating the changes that take place by means of equations.
9. How would you distinguish (*a*) salts of potassium, sodium and ammonium from one another, (*b*) salts of barium, strontium and calcium from one another ?
10. State what you know with regard to zinc or silver.
11. What volume of hydrogen sulphide, under normal conditions, would be required to convert the lead in 100 gr.  $\text{Pb}(\text{NO}_3)_2$  into lead sulphide ?
12. What volume of CO at  $20^\circ$  and 750 mm. is produced on igniting 500 grams of anhydrous potassium carbonate with charcoal ?



## SESSIONAL EXAMINATION.

## BOTANY.

## I.

FRIDAY, APRIL 17TH:—9 TO 12 A.M.

*Examiner*, ..... D. P. PENHALLOW, B.Sc

1. Give an outline of Classification.
2. Explain fully the use of the terms "Cycle of Development" and "Alternation of Generations."
3. Describe fully the nature and functions of the microspore, with examples.
4. Describe fully the function and development of a macrospore. Examples.
5. Describe the reproductive process in *Fucus*.
6. Describe the structure and reproduction of yeast.
7. Give an account of the nature and sources of plant food.
8. Describe fully the part which leaves take in the appropriation and digestion of Carbon.
9. Trace the development of the embryo in a gymnospermous plant.
10. State fully the distinguishing features of an exogen and endogen.
11. State what you can respecting the relative value of cross and close fertilization in the perpetuation of the species, and show by examples, what special adaptations there may be in either case, to promotion or prevention.

## SESSIONAL EXAMINATION.

## BOTANY.

## II

FRIDAY, APRIL 17TH:—2 TO 5 P. M.

*Examiner*, ..... D. P. PENHALLOW, B.Sc.

Determine specimen 1, using manual.

Describe 2 fully.

Refer 3 to branch, order and genus. Describe any peculiar features of the fruit

Refer 4 to the genus, and classify fully.

Give the full name of 5, and classify, using the manual.

Describe 6 fully, and classify, giving the generic and specific names.

Describe the nature of the various organs found in 7.

Describe the nature of the various organs found in 8, and classify.

Name specimen 9, and describe the organs present.

Name specimen 10, and classify. Show the nature of the organ represented.

### ADVANCED BOTANY.

#### THIRD YEAR.

THURSDAY, APRIL 23RD :—2 TO 5 P.M.

*Examiner*,..... D. P. PENHALLOW, B.Sc.

#### 1. Given

(a) A one-sixth inch objective.

A one-half inch eye-piece.

A ten inch tube.

Determine the theoretical amplification of the instrument.

2. Describe the physical characteristics of starch, and show what tests serve to differentiate it from other cell contents.

3. Give a concise account of the characteristics and occurrence of aleurone.

4. Sections are allowed to lie for some days in one-half per cent. potash solution. Describe the nature of the changes to be looked for, state how the action of the potash may be limited, and explain why a strong solution should not be employed.

5. Describe the composition and occurrence of cystoliths, and state tests for demonstrating the nature of the component parts.

6. Give the characteristic tests for a differentiation of lignified and unligified tissue.

7. Give a concise account of the structural features of a stem of the gymnospermous type.

8. Describe the characteristic features of sclerenchyma, show where it occurs, and indicate some of the principal variations which it exhibits.

9. Describe a method of determining continuity of protoplasm, and state the reasons for the various steps taken.

10. Given

(a) A section of castor oil bean (dry).

(b) A section of the stem (fresh) of cucurbita.

These sections require to be mounted in (a) glycerine jelly and (b) chloroform balsam, respectively.

Detail the process in each case, giving reasons for the various steps taken.

11. Describe fully the process of micrometry, and show what standard of measurement is employed.

12. Give an account of the occurrence and physical characteristics of crystalloids, and show how they may be distinguished from other plant crystals.

## SESSIONAL EXAMINATION.

### ZOOLOGY.

#### THIRD YEAR ARTS, SECOND YEAR APPLIED SCIENCE AND FIRST YEAR MEDICINE.

THURSDAY, APRIL 16TH :—2 TO 5 P.M.

Examiner,.....W. E. DEEKS, B.A., M.D.

1. Define : (a) Metamorphosis, (b) Parthenogenesis, (c) Alternation of generations, (d) Parasiticism, (e) Polymorphism. Give examples.

2. Describe fully the structure and mode of development of any member of the *Scyphozoa*. Contrast them morphologically with the *Hydrozoa*.

3. Describe the structure of a *Lamellibranch*. Give reasons why they are grouped with the *Gastropoda* and *Cephalopoda*. Name the principal external homologies, and compare the circulatory system in the three groups.

4. Write on the structure, development and social habits of the Termites, or Honey bees.

5. State the distinctive characters and the classification of the *Chaetopoda*. Give a detailed description of any type.



9. How would you distinguish Tetrahedrite from Chalcocite, Limonite from Gôthite, Ilmenite from Franklinite, Millerite from Marcasite?

10. Explain polymorphism and isomorphism, giving several examples of each.

11. Describe carefully the specimens and models exhibited.

B.A. HONOURS IN NATURAL SCIENCE AND B.A.Sc.—CHEMISTRY  
AND MINING COURSES.

(FIRST PAPER) MINERALOGY.

FRIDAY, DEC. 20TH :—MORNING, 9 TO 12.

Examiner,..... { B. J. HARRINGTON, M.A., PH.D.  
FRANK D. ADAMS, M.A.Sc., PH.D.

1. What suggestion has recently been made as to difference in the chemical constitution of Pyrite and Marcasite?

2. Give a classification of the natural oxides with several examples of each group.

3. Calculate the formulæ of two minerals whose analysis gave the following percentage compositions :—

1. Sulphur 19.6, Antimony 29.2, Lead 50.6, Copper 0.4, Zinc 0.2.

2. Silica 35.4, Ferric Oxide 30.9, Alumina 0.6, Lime 32.2, Magnesia 0.8.

4. Explain the chemical constitution of Hornblende, Chrysolite, Orthoclase, Titanite and Topaz. Describe briefly the two last species.

5. Give the composition of the following: Aquamarine, Flos-ferri, Chalcotrichite, Alexandrite, Ceylonite, Jeffersonite. State also the species to which each of the above belongs.

6. State what you know with regard to the crystallization, hardness and cleavages of Stibnite, Sphalerite, Apophyllite, Albite, and Wernerite.

7. State what you know with regard to the mode of occurrence and mineral associations of Argentite, Chromite, Limonite, Apatite and Malachite.

8. Give the general characters of the Micas, and explain the division of the group into two orders.

9. Explain Miller's notation as applied to crystals of the triclinic system.



10. How would you distinguish Psilomelane from Pyrolusite, Rutile from Cassiterite, Millerite from Marcasite, Zircon from Vesuvianite, and Pyromorphite from Mimetite.

AFTERNOON, 2 TO 4.

Describe carefully any 20 of the 24 mineral specimens exhibited,

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B.A. HONOUR EXAMINATION IN GEOLOGY AND NATURAL HISTORY.

(SECOND PAPER) PRACTICAL GEOLOGY.

THURSDAY, APRIL 2ND :—MORNING, 9 to 1.

Examiners, ..... { B. J. HARRINGTON, M.A., PH.D.  
FRANK D. ADAMS, M.A.P.Sc., PH.D.

1. What do you understand by Vertical and Horizontal Sections ? How are Vertical Sections constructed and when are they to be preferred ?

2. The amount of coal underlying each square mile of country in the vicinity of Lethbridge is 5,500,000 tons. Explain how it is possible to make such a calculation. Why cannot similar calculations be made in the case of deposits of the precious metals ?

3. Define the following terms : Hade, Lode, Overthrust, Fahlband, Iron Hat.

4. Draw out a general scheme for the classification of mineral deposits.

5. Describe the lead deposits of the Galena Limestone in the Mississippi Region. What is the most probable explanation of their origin ?

6. State what you know concerning the nature and origin of the Altenberg Tin Stockworks.

7. Describe the investigations recently carried out by Mr. D. H. Brown on the variation in composition presented by different portions of the same casting of Copper Nickel Matte from the Sudbury furnaces, and their bearing on the question of the origin of the Sudbury ores.

8. Describe the chief structures presented by mineral veins.

9. A line AB is drawn across a portion of the Geological Map (No. 1) submitted. Construct a horizontal section along this line. Is there anything worthy of note in connection with the mode of occurrence of the ore deposits shown upon the map ?

10. Describe "Section VI" (No. 2), and state what it teaches concerning the geological history of the Himalayas.

A Describe the longest of the three sections in (No. 3).

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(THIRD PAPER) PETROGRAPHY.

SATURDAY, APRIL 4TH:—MORNING, 9 TO 1.

*Examiners*, ..... { B. J. HARRINGTON, M.A., PH.D.  
FRANK D. ADAMS, M.A.F.Sc., PH.D.

1. From a crystal of biotite two sections are cut—the first parallel to oP, the second parallel to  $\infty$  P. Describe and explain the optical properties of each when examined under the microscope.—(1.) Making use of the lower Nicol alone.—(2.) Between crossed Nicols in parallel polarized light.—(3.) Between crossed Nicols in convergent polarized light.

2. Describe very briefly the following: Pitchstone, Anorthosite, Andesite, Melaphyre.

3. One portion of basic magma crystallizes in the form Gabbro, another portion as Basalt. Describe these rocks, and explain how they differ from one another and wherein they resemble one another. State the causes of their differences.

4. Describe in detail the changes which take place when by dynamic action a granite is changed into a gneiss.

5. State what you know concerning the changes by which a sandstone becomes a quartzite.

6. Syenite and Phonolite. Their essential and commonly occurring accessory constituents. Their structures and subdivisions. Are they acid or basic?

7. What do you understand by the terms: Amygdaloidal, Perlitic, Foliated, Spherulitic, Clastic?

8. Draw out a scheme showing Rosenbusch's classification of the Plutonic rocks with their Volcanic equivalents.

9. Name the ten hand specimens. What structures are exhibited by Nos. 8, 9 and 10?

10. Examine the six thin sections under the microscope. State in each case what minerals are present, as well as the name and structure of the rock.

## (FOURTH PAPER) ADVANCED GEOLOGY.

THURSDAY, APRIL 9TH:—MORNING, 9 TO 12.

*Examiners*,..... { B. J. HARRINGTON, M.A., PH.D.  
FRANK D. ADAMS, M.A.P. SC., PH.D.

1. State what you know concerning the nature and origin of Deltas, with especial reference to the geology of Egypt.
2. Describe the method employed in Switzerland for preventing the destructive effects formerly produced by the river Linth on its flood plain, and the results.
3. Explain the changes, chemical and mechanical, which take place when a block of granite crumbles into soil.
4. State what you know concerning the investigations of Rothpletz on the Formation of Oolite.
5. Describe a typical artesian well, pointing out the geological conditions requisite for obtaining artesian water in any district.
6. Explain the difference between Contemporaneity and Homotaxis.
7. Describe briefly Darwin's investigations on the origin of vegetable mould.
8. Give a short historical account of the recognition and establishment of the several geological systems.

## (FIFTH PAPER) PALÆONTOLOGY.

TUESDAY, APRIL 21ST:—MORNING, 9 TO 1.

*Examiners*,..... { B. J. HARRINGTON, M.A., PH.D.  
FRANK D. ADAMS, M.A.P. SC., PH.D.

1. Explain the value of fossils in determining the age of the strata in which they occur and the conditions under which these strata were deposited.
2. State what you know of the fossil Hexactinellid Sponges.
3. Describe the parts of a typical Tabulate coral, illustrating your description by sketches. Characterize any three genera, and give their range.
4. Describe the parts of a typical crinoid, illustrating your description by sketches. Give the range of any four genera.

5. Describe fully and state the classification of any group of fossils you may have specially studied, with its geological relations.

6. State the zoological relations and the geological age of the following:—

*Eozoon, Tetradium, Phyllograptus, Astylospongia, Olenellus, Polystomella, Spirifer, Receptaculites, Toxaster, Productus, Aulopora, Pleurocystites.*

7. Describe the parts of a typical Trilobite, illustrating your description by sketches. Give the generic characters and the range of each of the following:—*Olenus*, *Asaphus*, *Agnostus*, *Iliaenus*, *Calymene*.

8. Describe any three genera of inarticulate Brachiopods, giving in each case the geological range.

9. Refer the specimens exhibited to their geological formations and to their places in the zoological or botanical classification.

(SIXTH PAPER) CANADIAN GEOLOGY.

FRIDAY, APRIL 24TH:—MORNING, 9 TO 1.

*Examiners*, ..... { B. J. HARRINGTON, M.A., PH.D.  
FRANK D. ADAMS, M.A.P. SC., PH.D.

1. Into what great physical divisions does Canada naturally fall when considered geologically? Define the limits of these, and state briefly the systems of formations which underlie them.

2. Describe the Devonian system as developed in the peninsula of Ontario. Mention some of the more characteristic fossils of any one of its Formations.

3. Draw a line of section across the Gaspé peninsula from the Gulf of St. Lawrence to mouth of the Cascapedia on the Bay Chaleur, continue it in a south-easterly direction to Minudie on the Bay of Fundy, and then on to the south-west end of the Joggins Section.

4. What do you understand by the Quebec group? How is it limited geographically? What is its age and how is it related to the

strata of corresponding age in the interior plateau? Mention some of its characteristic fossils.

5. State what you know concerning the petrographical character, age, distribution and economic resources of the Keewenian Series.

6. What formations in Canada would be indicated by the prevalence of the following genera :— *Asaphus*, *Favorites*, *Megalomus*, *Phyllograptus*, *Petraia*, *Columnaria*, *Loftusia*, *Saxicava*.

7. State what you know of the Carboniferous system as developed in New-Brunswick.

8. What evidence is there of volcanic action in the Dominion in times past? State where such action can be recognized, and the age of the strata in which such evidences are to be found.

9. Potsdam Sandstone. Age, distribution in the Dominion and characteristic fossils.

10. Describe the following formations, stating their geological position and any special points of interest connected with them :— Acadian, Niagara, Salina.

11. Character and succession of Post Pliocene deposits in the vicinity of Montreal. Describe ten characteristic fossils of the same, and state the character of the climate which these indicate. What evidences of Post-Pliocene submergence are afforded by Mount Royal?

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# FACULTY OF APPLIED SCIENCE.

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SESSIONAL EXAMINATIONS,

1896.

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NOTE.—For papers in Natural Science, in common with the Faculty of Arts,  
see pp. 279-286.



## FACULTY OF APPLIED SCIENCE.

EXAMEN DE FIN D'ANNÉE.

## SCIENCE.—1ERE ANNÉE.

LE 15 AVRIL :—DE 9 HEURES À MIDI. — 200000

*Examineurs*,..... { M. INGRES.  
LE REV. J. L. MORIN.

A,

Répondre aux questions suivantes:—

Nommer tous les outils pour travailler le bois, et dire à quoi chacun sert spécialement.

Quels sont les ouvriers employés à la construction d'une maison, et que fait chacun ?

Expliquer les phrases suivantes :

Aide-toi, le ciel t'aidera.

Il faut hurler avec les loups.

Le diable n'est pas si noir qu'on le dépeint.

Reproduire en prose la fable :—Le Loup et l'Agneau,—avec la morale.

Comment forme-t-on le Conditionnel, et quand est-il employé ?

Donner les temps primitifs des verbes suivants : cuire, boire, dormir, aller, faire, mourir, prendre, mettre, être, venir, voir, sortir.

B.

Reproduction par écrit de l'expérience suivante :

Choisissez un verre à liqueur de forme conique, et dont le diamètre du bord soit un peu plus grand que celui d'un dollar en argent ; placez au fond une pièce de dix sous, et au-dessus le dollar en argent, qui doit ne descendre que très peu dans le verre ; il se placera horizontalement comme une sorte de couvercle.

Vous pouvez annoncer maintenant que, sans toucher à ce verre ni au dollar, vous allez faire sortir la pièce de dix sous. Il suffit pour cela de souffler violemment sur le bord du dollar; celui-ci oscille autour de son diamètre pour se placer verticalement, et en même temps l'air que votre souffle a comprimé sous la pièce de dix sous la fait sauter hors du verre, puis le dollar revient à sa position horizontale.

C.

Dictée.

## LA NUTRITION.

Vous avez entendu parler de ces admirables machines qui reçoivent, par un bout, le coton en paquets, et qui le rendent, par l'autre bout, en belle toile fine, pliée, emballée, prête à être livrée au marchand.

Vous avez au dedans de vous une machine bien plus admirable encore. Elle reçoit de vous votre tortine, et vous la rend changée en ongles, en cheveux, en os, en chair.

Cette machine enchantée, vous n'êtes pas les seuls à la posséder. Votre chat en a une aussi, et le bœuf aussi, et tous les animaux.

ABRÉGÉ DE J. MACÉ.

Dater en toutes lettres.

## EXAMENS DE FIN D'ANNÉE.

SCIENCES—2<sup>ME</sup> ANNÉE.

Examineurs,..... { M. INGRES.  
J. L. MORIN.

A.

1. Dictée.

Répondre aux questions suivantes :

B.

2. Expliquez brièvement l'origine et la formation de la langue française.

3. (1) Qui étaient : (a) les *Troubadours*, (b) les *Trouvères*, (c) les *Jongleurs*? (2) A laquelle de ces classes appartenait Richard Cœur-de-Lion? (3) Racontez comment le ménestrel Blondel le retrouva.

4. (1) Quelle fut l'origine du théâtre en France? (2) Quelles associations s'organisèrent au Moyen Age qui donnèrent une grande impulsion au drame? (3) Indiquez les principaux caractères de ces associations.

5. Faites connaître brièvement les causes de la Renaissance.

6. La réforme littéraire au XVI<sup>ème</sup> siècle en France, son but, ses principes, ses défauts, son chef.

Qu'entendez-vous par la *Pleiade*?

7. Faites un court résumé des points suivants de *L'Expédition de la Jeune-Hardie* :

(a) Pourquoi Louis Cornbutte ne se trouvait pas sur la *Jeune-Hardie*

à son retour à Dunkerque. (b) La part que prit Marie dans l'expédition.  
(c) Quelques difficultés de cette expédition.

8. Conjuguez les verbes suivants au présent de l'indicatif et du subjonctif; au futur et au passé défini: (1) *Dormir*, (2) *boire*, (3) *courir*, (4) *vaincre*, (5) *cueillir*, (6) *luire*.

C.

Traduisez en français:

#### A FAITHFUL DOG.

A youthful conscript, desperately wounded in a battle, was conveyed indiscriminately with hundreds of others to a hospital.

In the course of a few days a little dog made his appearance, and searching amidst the dying and the dead, discovered at length his expiring master, and was found licking his hands. After his death a comrade took charge of the faithful animal; but no kindness could console him. He refused all food, pined away and died.

Dater en toutes lettres.

#### GERMAN.

#### SECOND YEAR APPLIED SCIENCE.

WEDNESDAY, APRIL 15TH:—AFTERNOON, 2 TO 5.

*Examiner*,..... L. R. GREGOR, B.A.

Hodges' Course in Scientific German; German Notes on Experimental Physics; Freytag—Die Journalisten; New-Yorker Staatszeitung.

#### 1. Translate into English:—

(a) Eine chemische Formel ist zugleich ein Ausdruck für die qualitative und die quantitative Zusammensetzung der Körper. Die Formel des Wassers  $H_2O$  drückt aus, dass darin ein Atom (16 Gewichtsteile) Sauerstoff mit zwei Atomen (2 Gewichtsteilen) Wasserstoff zu einem Molecül (18 Gewichtsteilen) Wasser verbunden ist. Wenn ein Körper durch die Einwirkung von anderen Körpern, von Wärme, Elektrizität u. s. w. zersetzt wird, so nennt man dieses eine *chemische Reaction*. Bei derselben ändern die Atome ihre gegenseitige Lage, gruppieren sich in anderer Weise als vorher und bilden neue Molecüle. Mit Hülfe der chemischen Formeln lassen sich solche Reactionen übersichtlich durch Gleichungen ausdrücken.



(b) Das Telephon in der Gestalt, wie es sich jetzt in wenigen Jahren einen Platz unter den wichtigsten Verkehrsmitteln der Menschheit errungen hat, ist einer der genialsten Apparate, den die Physik kennt, um so genialer, weil er in überaus einfacher Weise construirt ist und Principien benutzt, die alle längst bekannt und angewendet waren. Es ist *Graham Bell*, dem wir die Erfindung des Telephons verdanken. Zwar waren schon früher Versuche gemacht worden, Töne vermittelst der Elektrizität in die Ferne zu übertragen; insbesondere hat *Philipp Reis* 1860 ein Telephon construirt, durch welches auch bereits Worte und Töne elektrisch übertragen werden konnten, aber einen praktischen Erfolg erlangte dieses Unternehmen erst durch die einfache Konstruktion von Bell.

(c) Adèlheid (lächelnd). Ich glaube nicht an böse Engel. — Was zwischen Ihnen und Aldendorf schlimm geworden ist, kann wieder gut werden. Heute Feind, morgen Freund, heißt es in der Politik; aber Ida's Gefühl wird sich nicht so schnell ändern. — Herr Oberst, ich habe ein prächtiges Modell zu einem Kleide mitgebracht, das neue Kleid will ich diesen Winter als Brautjungfer tragen.

Oberst. Daran ist nicht zu denken! So lasse ich mich nicht fangen, Mädchen. Ich spiele den Krieg in Feindesland. Warum treiben Sie andere Leute zum Altar, und Sie selbst müssen erleben, daß Ihre ganze Nachbarschaft Sie spottend die Dornenrose und den jungfräulichen Landwirth nennt.

## 2. Translation at sight (N.Y. Staats-Zeitung).

Translate:

Berlin, 23. März. Der Kaiser und die Kaiserin sind heute Morgen von hier nach Genua abgereist, wo sie, wie man annimmt, mit dem König von Italien zusammentreffen und sich alsdann an Bord der kaiserlichen Yacht „Hohenzollern“ zu einer Fahrt durch's Mittelmeer und durch das adriatische Meer begeben werden. Es ist noch unbestimmt, ob und wann ein gemeinschaftliches Zusammentreffen des deutschen Kaiserpaars und des Königs von Italien mit dem Kaiser Franz Joseph stattfinden wird.

Vor der Abreise empfing der Kaiser den unmittelbar vorher eingetroffenen früheren deutschen Gesandten in St. Petersburg, General v. Werder, welcher ihm ein Handschreiben des Kaisers von Rußland überbrachte.

3. Write two German compositions of not less than one hundred words each, on the following subjects, taking one from each group:

(a) Magnetnadeln, Stimmgabeln.

(b) Das Prisma, Die Reflexion des Lichtes.

## 4. Reading.

## FIRST YEAR.

## CHEMISTRY.

THURSDAY, APRIL 16TH :—MORNING, 9 TO 12.

Examiners, ..... } B. J. HARRINGTON, M.A., PH.D.  
 ..... } ALEX. BRODIE, B.A.SC.

1. Give illustrations of what is termed the cycle of elements in nature.
2. How is carbon monoxide prepared? What are its properties and uses?
3. What is Avogadro's Law? What are the facts upon which it is based?
4. Give an example of each of the following classes of bodies: Anhydride, basic salt, acid salt, hydroxide, alloy.
5. What weight of crystallised sodium carbonate could be prepared from a ton of salt, supposing the full theoretical yield to be obtained?
6. Compare octahedral and red phosphorus as to properties.
7. What weights of copper, silver and lead, respectively, should be dissolved in nitric acid in order to obtain 100 grams of the nitrate of each metal?
8. How would you distinguish between salts (*a*) of nickel and cobalt, (*b*) arsenic and stannic tin, (*c*) ferrous and ferric iron, (*d*) potassium and ammonium, (*e*) zinc, aluminium, and magnesium?
9. By means of what tests would you distinguish the following acids from one another.—(*a*) Hydriodic and hydrobromic, (*b*) carbonic and oxalic, (*c*) tartaric and citric, (*d*) sulphuric and phosphoric?
10. Give three of the principal tests for any five of the following metals: lead, strontium, manganese, chromium, silver, arsenic, zinc, copper.

THIRD YEAR (ADDITIONAL) IN ARTS, AND SECOND YEAR IN  
 APPLIED SCIENCE (DEPARTMENT OF MINING).

## PRACTICAL CHEMISTRY.

TUESDAY, APRIL 7TH :—MORNING, 9 TO 12.

Examiners, ..... } B. J. HARRINGTON, B.A., PH.D.  
 ..... } NEVIL NORTON EVANS, M.A.SC.

(NOTE.—Answer any *eight* questions.)

1. Give the principal reactions of five of the following metals: mercury, arsenic, cobalt, magnesium, potassium, ammonium.

2. Describe carefully how an alloy is brought into solution, and what phenomena are to be noticed in connection with the procedure.
  3. Describe carefully the operations of precipitation and filtration.
  4. How are the metals divided into groups for the purpose of analysis? What are the principal groups, and how are they distinguished from one another?
  5. Describe carefully the precipitation of the metals of the copper and arsenic groups, and the separation of the precipitate from the solution.
  6. Describe the separation of barium, strontium, and calcium from one another when they occur together as chlorides in a solution.
  7. Into what groups are the acids divided? What are the principal acids of each group?
  8. What acids are generally found during the analysis for metals?
  9. Give tests for five of the following acids: Chromic, hydrofluoric, silicic, hydrobromic, boric, nitric.
  10. How much hydrochloric acid is required to precipitate one gram of silver from solution?
- 

### THIRD YEAR (*Departments of Mining and Practical Chemistry*).

#### PRACTICAL CHEMISTRY.

MONDAY, APRIL 13TH:—MORNING, 9 TO 12.

*Examiners*, ..... } B. J. HARRINGTON, M.A., PH.D.  
                                               } NEVIL NORTON EVANS, M.A., SC.

(NOTE.—Answer No. 10, and any 7 of the other questions.)

1. What is the general method of determining gravimetrically the quantity of a substance in one of its compounds?
2. Describe the methods of drying and igniting precipitates.
3. Describe the preparation of pure calcium carbonate *or* of pure sodium chloride.
4. Give in detail a method for determining the sulphur in a sample of zinc blende.

5. How may the calcium in a sample of calcium carbonate be determined?

6. What precautions are to be taken in filtering, drying, and igniting sulphide of antimony?

7. Describe a method of estimating  $\text{CO}_2$  in marble.

8. How may the quantity of iron in a sample of ferrous sulphate be determined?

9. Describe a method for the complete analysis of a limestone or a felspar.

10. In determining chlorine in a sample of sodium chloride, 0.635 grm. of the substance was used, and the silver chloride obtained weighed 1.501 grm. What was the percentage error?

### THIRD YEAR AND B.A. Sc.

#### ORGANIC CHEMISTRY.

MONDAY, MARCH 30TH :—MORNING, 9 to 12.

*Examiner*..... B. J. HARRINGTON, B.A. Ph.H.

1. How are Glycols formed? What are their properties? What evidence is there that Ethylene Glycol contains two primary Alcohol groups?

2. Explain the stereo-chemical relations of the different Tartaric Acids.

3. How is Succinic Acid formed synthetically? How ordinarily prepared? Give its properties.

4. Explain the constitution and give the properties of Glycocol.

5. Explain briefly the constitution of any three of the following compounds :—Cymene, Pyrogallol, Resorcine, Asparagine, Caffeine.

6. An organic base has the empirical formulæ  $\text{C}_3\text{H}_5\text{N}$ ; what means would you take to ascertain its constitution?

7. Explain by means of structural formulæ the supposed relations of Borneol, Cineol and Camphor.

8. Give the formulæ preparation and properties of Allyl Alcohol.

9. State what you know with regard to the chemistry of the volatile oils.

10. How would you determine the molecular weight (a) of Dextrose, and (b) of Acetic Acid

B.A. Sc. (*Chemistry Course*).

## INORGANIC CHEMISTRY.

THURSDAY, APRIL 9TH :—MORNING, 9 to 12.

*Examiner* ..... B. J. HARRINGTON, M.A., Ph.D.

1. Discuss the question of the valence of Nitrogen in the Nitrogen Oxides.
2. Give the preparation and properties of the two Chlorides of Phosphorus.
3. Distinguish among primary, secondary and tertiary Phosphates. What is generally the result of heating (1) primary and (2) secondary Phosphates? Give illustrations.
4. Explain Weldon's process for the régénération of Manganous Chloride.
5. How is Fluosilicic Acid prepared? Give equations to illustrate the chemical changes that take place. Explain by means of constitutional formulæ the supposed analogy between Metasilicic and Fluosilicic Acids.
6. What takes place when dry Ammonia gas and Carbon Dioxide are brought together? Also when the product is dissolved in water? Give equations.
7. What takes place when Potassium Iodide is added to a solution of a Cupric salt? If a reducing agent, Sulphur Dioxide for example, is present, what is the result? Give equations.
8. How is Aluminium Chloride prepared? What takes place (a) when the crystallised and (b) when the anhydrous salt is heated? What arguments can you give in favour of writing the formulæ of the Chloride as  $\text{AlCl}_3$  rather than  $\text{Al}_2\text{Cl}_6$ ?
9. Give the formulæ of the Lead Oxides and briefly describe the preparation of each Oxide.
10. Explain the supposed constitution of the Manganates and Permanganates.



B.A. Sc. (*Chemistry Course*).

## ANALYTICAL CHEMISTRY AND ASSAYING.

TUESDAY, APRIL 7TH:—MORNING, 9 TO 12.

*Examiner*, ..... B. J. HARRINGTON, M.A., PH.D.

1. Explain the use of Sodium Peroxide in the analysis of Chromic and Titanic Iron Ores.
2. How would you estimate (*a*) the Copper and (*b*) the Silver in a specimen of Argentiferous Tetrahedrite?
3. What are the principal methods for determining the value of Manganese Ores? Describe one of them.
4. In the analysis of a Limestone 0.5 grm. was employed. The lime was precipitated as Oxalate, the Oxalate dissolved in dilute Sulphuric Acid and titrated with solution of Potassium Permanganate of which 59.2 c.c. were required. 16.75 c.c. of the Permanganate corresponded to 1 gram of Ferrous Ammonium Sulphate. Deduce the proportion of Calcium Carbonate in the Limestone.
5. Explain Eggertz's method for the estimation of combined Carbon in Steel, stating carefully the conditions essential to accuracy.
6. Describe Emmerton's method for the rapid estimation of Phosphorus.
7. How would you estimate (*a*) the proportions of Ferrous and Ferric Iron, and (*b*) the amount of Titanium Dioxide in an insoluble Silicate?
8. Discuss the question of the interpretation to be put upon the results obtained in the sanitary analysis of Water.
9. What are the principal methods employed in determining the melting points of organic bodies? Point out their relative advantages and disadvantages.
10. An ore consists of a mixture of Iron Pyrites (auriferous), Zinc Blende and Galena; how would you determine the proportions of Gold, Zinc and Lead?

B.A.Sc. (*Mining Course*).

## ASSAYING.

TUESDAY, APRIL 7TH:—MORNING, 9 TO 12.

*Examiner*, ..... B. J. HARRINGTON, M.A., PH.D.

1. How would you rapidly ascertain the proportion of Lime (*a*) in a Limestone and (*b*) in a Slag?

2. Give the Iodine process for the estimation of Copper, explaining the reactions that take place. What may cause the return of the blue colour after titration?

3. Describe the volumetric assay of a Lead ore with Ammonium Molybdate. Compare the method with the gravimetric and also the fire-assay as regards time and accuracy.

4. Point out the advantages and disadvantages of the electrolytic Copper assay as compared with the Cyanide method. What metals are most likely to interfere with either method?

5. State briefly how you would estimate the Sulphur (*a*) in a sample of Coal and (*b*) in a sample of Iron Pyrites. What are the principal sources of error in each case?

6. Give an outline of the electrolytic assay of a Nickel ore containing Copper.

7. Discuss the principles involved in making up fluxes for fire-assaying.

8. How would you determine the Gold in a sample of Auriferous Mispickel?

9. An ore consists of a mixture of Zinc Blende and Copper Pyrites in a Calcite gangue, and carries a little Silver; how would you determine (*a*) the Silver and (*b*) the Zinc (volumetrically)?

10. How would you ascertain the value of the materials represented by the specimens exhibited?

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### FIRST YEAR.

### MATHEMATICS, I.

TUESDAY, DECEMBER 17TH :—MORNING, 9 TO 1.

*Examiner*,..... R. S. LEA, M.A.E.

1. Prove that the sum of the squares on the sides of any quadrilateral exceeds the sum of the squares on its diagonals by four times the square on the line joining the middle points of the diagonals.

2. If a straight line be divided into two equal, and also into two unequal segments, the sum of the squares on the two unequal segments is double the sum of the squares on half the line, and on the line between the points of section.

Hence show that the sum of the squares on two straight lines equals twice the square on half their sum, together with twice the square on half their difference.

3. If a straight line be a tangent to a circle, and from the point of contact a chord be drawn, the angles which the chord makes with the tangent shall be equal to the angles in the alternate segments of the circle.

4. Describe a circle to pass through a given point, touch a given line, and have a given radius.

5. What is the locus of the vertices of triangles which have a given base and a given vertical angle?

If one side be produced through the vertex a distance equal to the other side, what will be the locus of its extremity?

6. If from any angle of a triangle a straight line be drawn perpendicular to the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.

7. Show how to cut off a ninth part of a triangle by a line parallel to the base.

8. If a straight line is perpendicular to two intersecting straight lines at their point of intersection, it will be perpendicular to the plane which contains them.

9. The angle which a straight line makes with its projection on a plane is less than that which it makes with any other straight line that meets it in that plane.

10. Find the lateral surface and volume of a right circular cone.

11. A right pyramid whose altitude is 8 inches has for its base a regular hexagon of 2 inches side. What is the area of the section made by a plane parallel to the base and 3 inches above it? What is the volume of the lower portion?

12. In a parabola, prove that :

(a) A diameter bisects all chords parallel to the tangent at its extremity.

(b) The area cut off by a chord  $= \frac{1}{3}$  of the area of the triangle formed by the chord and the tangent at its extremities.

13. If Q P, Q P' are two tangents to a parabola and F the focus, prove that

$$Q F^2 = P F \cdot P' F$$

14. Find the locus of the centres of circles that touch two given equal circles.

What would the locus be if (a) the given circles were unequal, (b) if one circle were replaced by a straight line?

## FIRST YEAR.

## MATHEMATICS, II.

TUESDAY, APRIL 7TH :—MORNING, 9 TO 12.30.

*Examiner*,.....R. S. LEA, MA.E.

1. Show that:

$$(1) \frac{a(b+c)}{(a-b)(c-a)} + \frac{b(a+c)}{(a-b)(b-c)} - \frac{c(a+b)}{(a-c)(b-c)} = 1$$

$$(2) \frac{b}{\sqrt{a}} \times \sqrt[3]{a} c \times \frac{\sqrt[4]{c^3}}{\sqrt{b}} \times \frac{\sqrt{b-1}}{a^{\frac{1}{6}}} = c^{\frac{13}{12}}$$

$$(3) \text{ If } a^b = b^a \text{ show that (i) } \left(\frac{a}{b}\right)^{\frac{a}{b}} = \frac{a}{b} - 1$$

$$(4) \text{ If } \frac{a}{b} = \frac{c}{d} = \frac{e}{f}, \sqrt{\frac{a^6 b - 2 c^5 e + 3 a^4 c^3 e^2}{b^7 - 2 d^5 f + 3 b^4 c d^3 e^2}} = \frac{a c e}{b d f} \text{ (ii) if } a = 2b, b = 2$$

$$(5) \frac{\sqrt{1+x} + \sqrt{1-x}}{\sqrt{1+x} - \sqrt{1-x}} = b \text{ when } x = \frac{2b}{b^2+1}$$

2. Factor: (1)  $x^2-1$  (4 factors)

$$(2) m^4 + n^4 - 18 m^2 n^2 \text{ (2 factors)}$$

$$(3) x^4 y - x^2 y^3 - x^3 y^2 + x y^4 \text{ (4 factors)}$$

$$(4) a^3 - b^3 - c^3 - 3 a b c \text{ (2 factors)}$$

$$(5) x^3 - 8 x^2 - 31 x - 22 \text{ (3 " )}$$

3. Solve the equations:

$$(1) \frac{x^2-2x+3}{2x-3} = \frac{x^2-3x+5}{3x-5},$$

$$(2) \frac{x-4}{x-3} \frac{a}{a} + \frac{x-5}{x-4} \frac{a}{a} = \frac{x+6}{x-4} \frac{a}{a} + \frac{x+5}{x-3} \frac{a}{a},$$

$$(3) 3x + 2\sqrt{x-1} = 0,$$

$$(4) \frac{x+3}{x+2} + \frac{x-3}{x-2} = \frac{2x-3}{x-1},$$

$$(5) \left. \begin{aligned} x-y &= 2 \\ x^3-y^3 &= 98 \end{aligned} \right\}$$

4. Show how to determine, without solution, whether the roots of a quadratic equation are rational or irrational or imaginary.
5. Find the last term and the sum of the series  $8.1, 2.7, .9 \dots$  to 7 terms.
6. (a) How many permutations can be made from the letters of the word *lassitude*?  
 (b) In how many ways can  $n$  persons form a ring?  
 (c) Out of 16 consonants and 5 vowels, how many words can be formed each containing 4 consonants and 5 vowels?
7. (a) Write down the  $r + 1^{th}$  term of  $(x + a)^n$   
 (b) Show how to find which is the greatest term in this series.  
 (c) Which is the greatest when  $x = 5, a = 3, n = 16$ ?
8. Expand  $(1 + x)^{\frac{2}{5}}$  to 4 terms.

FIRST YEAR.

MATHEMATICS, III.

MONDAY, APRIL 13TH:—MORNING, 9 TO 1.

Examiner, ..... R. S. LEA, MA.E.

1. Prove that  $\sin(A + B) = \sin A \cos B + \cos A \sin B$ .
2. Show that
  - (1)  $\sec^4 \theta + \tan^4 \theta = 1 + 2 \sec^2 \theta \tan^2 \theta$ ,
  - (2)  $\frac{1 - 2 \sin^2 \theta}{1 + \sin^2 \theta} = \frac{1 - \tan^2 \theta}{1 + \tan^2 \theta}$ ,
  - (3)  $\sin \theta = \frac{2 \tan \frac{\theta}{2}}{1 + \tan^2 \frac{\theta}{2}}$ ,
  - (4)  $\tan^{-1} \frac{1}{3} + \sin^{-1} \frac{1}{\sqrt{5}} = \frac{\pi}{4}$ .
3. If  $\tan^2 A = 1 + 2 \tan^2 B$ , show that  $\cos 2 B = 1 + 2 \cos 2 A$ .



4. In any plane triangle

$$(1) \tan A + \tan B + \tan C = \tan A \tan B \tan C$$

$$(2) \cos \frac{1}{2} A = \sqrt{\frac{s(s-a)}{b c}},$$

5. Find the value of  $\theta$  ( $< 180^\circ$ ) from the equations:

$$(1) \sin^2 \theta - \cos \theta = 5 \cos^2 \theta$$

$$(2) \sin \theta + \sin 3 \theta = 0$$

6. Write down all the rules you know, for determining the species of the angles and sides in the solution of spherical triangles.

Show how to derive any two of them.

7. In any right-angled spherical triangle

$$(1) \cos A = \frac{\tan b}{\tan c}$$

$$(2) \cos a = \frac{\cos A}{\sin B}$$

$$(3) \tan A = \sin a \cot b \sec c$$

8. In any spherical triangle

$$(1) \cos a = \cos b \cos c + \sin b \sin c \cos A$$

$$(2) \cos a = \frac{\cos A + \cos B \cos C}{\sin B \sin C}$$

9. In the plane triangle in which

$$a = 562, b = 320, C = 128^\circ 4'$$

show that

$$A = 33^\circ 35', B = 18^\circ 21', c = 800.$$

10. In the spherical triangle in which

$$a = 84^\circ 14' 29'', b = 44^\circ 13' 45'', C = 36^\circ 45' 28''$$

show that

$$A = 130^\circ 5' 22.4'', B = 32^\circ 26' 6.4'', c = 51^\circ 6' 11.6''.$$

FIRST YEAR.

MATHEMATICS, IV.

MONDAY, APRIL 20TH:—MORNING, 9 TO 12

*Examiner*,.....G. H. CHANDLER, M.A.

1. How do you find the change of velocity of a moving point?

A velocity represented by one side of an equilateral triangle is changed into that represented by another side in the opposite direction round the triangle. Find the change in magnitude and direction.

2. A body is projected horizontally with a speed of 96 ft. per sec. Find (a) the position of the body at the end of 3 sec., (b) the direction of motion.

3.  $ABCD$  is a quadrilateral. Find the resultant of the forces represented in direction and magnitude by the straight lines  $AC$ ,  $DB$ ,  $AD$ , and  $BC$ .

4. From a square a portion is cut off by a line passing through the middle points of two adjacent sides. Find the centre of gravity of the remainder.

5. Find the ratio of the resistance to the applied force in the case of the screw

6. What weight can be supported by a force of 2 pounds, by means of a system of 8 pulleys arranged in two blocks, the weight of the lower block being 1 pound?

7. An iceberg floats with 1,000 cubic feet about the surface of the sea. Show that its volume is 10,250 cubic feet, the specific gravity of ice being .925 and that of the water 1.025.

8. A barometer, into the upper part of which a little air has got, records 28 in. when it should record 30 in. The volume of the air above the mercury is  $7\frac{1}{2}$  cu. in.; what was its volume at the atmospheric pressure?

9. A particle of mass  $m$  lbs. is moving with a speed  $v$  feet per second. Prove that its kinetic energy is  $\frac{1}{2} m v^2$  foot-poundals.

10. A square frame, one yard in the side, rotates once every second about one side which is vertical. What must be the co-efficient of friction to keep a ring from sliding down the opposite side?

## SECOND YEAR.

## MATHEMATICS, I.

TUESDAY, DECEMBER 17TH :—MORNING, 9 TO 12.30.

Examiner,..... G. H CHANDLER, M.A.

1. Draw the curves (1)  $y^2 = x^2 - x^3$ , (2)  $\rho^2 = 4 \cos 2 \theta$
2. Find the tangent at any point of the curve  $y^2 = x^2 - x^3$ .
3. The angular points of a triangle are (6, 2), (-2, 4), (4,-2); find :
  - (a) the co-ordinates of the centre of the circle described about the triangle,
  - b) the radius of this circle,
  - (c) the angle at the point (4,-2),
  - (d) the area of the triangle,
  - (e) the co-ordinates of the centre of gravity.
4. Find, in terms of the slope, the tangent to the circle  $x^2 + y^2 = r^2$ .
5. What is the equation of the circle which has the point (5, 3) for centre and the line  $3x + 2y = 10$  for tangent ?
6. Transform the curve  $2x^2 + y^2 - 4x + 2y + 1 = 0$  to parallel axes so that the terms of the first degree may disappear.
7. Prove that the normal of an ellipse bisects the angle between the focal radii.
8. The eccentricities of two conjugate hyperbolas are  $E$  and  $e$ ; prove that
 
$$\frac{1}{E^2} + \frac{1}{e^2} = 1$$
9. Find the equation of a line which touches the ellipse  $2x^2 + 3y^2 = 1$  and makes an angle  $\tan^{-1} 2$  with the line  $y = 3x - 1$ .
10. The rectangle contained by ordinates at the extremities of a focal chord of a parabola is constant.
11. Find the locus of the middle points of focal radii of an ellipse.

SECOND YEAR.

MATHEMATICS, II.

MONDAY, APRIL 13TH :—MORNING, 9 TO 12.30.

Examiner,..... G. H. CHANDLER, M.A.

1. Show that

$$(1) \ d (x^x) = x^x (1 + \log x) \, dx.$$

$$(2) \ d \log \tan \frac{1}{2} \theta = \operatorname{cosec} \theta \, d \theta,$$

$$(3) \ d \sin^{-1} \sqrt{\frac{x-a}{b-a}} = \frac{dx}{2 \sqrt{(x-a)(b-x)}}$$

$$2. \text{ If } y = e^{-x} \cos x, \quad \frac{d^4 y}{dx^4} + 4y = 0.$$

3. Show that

$$(1) \quad \int_1^2 \frac{dx}{1+4x-1} = .457,$$

$$(2) \quad \int_1^2 \frac{dx}{\sqrt{4x^2-1}} = .147,$$

$$(3) \quad \int_0^{\frac{1}{2}} \frac{dx}{\sqrt{1-4x^2}} = .785.$$

4. Also that

$$(1) \quad \int \frac{(1+x) \, dx}{x(1+x^2)} = \tan^{-1} x + \log \frac{x}{\sqrt{1+x^2}},$$

$$(2) \quad \int x^2 (\log x)^2 \, dx = \frac{1}{3} x^3 \left[ (\log x)^2 - \frac{2}{3} \log x + \frac{2}{9} \right].$$

5. By substituting  $\sec \theta$  for  $x$  show that

$$\int \frac{dx}{x^4 \sqrt{x^2-1}} = \frac{\sqrt{x^2-1}}{3x^3} (1+2x^2)$$

6. Find the asymptote of the curve

$$x^3 - 27y^3 = 2x^2.$$

7. What is meant by the evolute of a curve? Why does the radius of curvature touch the evolute? The evolute of the parabola  $y^2 = 4ax$  being  $27ay^2 = 4(x-2a)^3$ , show that the length of the latter curve inside the parabola is  $4a(3\sqrt{3}-1)$ .

8. The equation of a curve being  $x^3 + y^3 = x^4$ ,

(1) Show that the tangent at  $(2, 2)$  is  $5x - 3y = 4$ ,

(2) Find the tangent at the origin,

(3) Show that  $\frac{dy}{dx} = \frac{4x-3}{3(x-1)^{\frac{2}{3}}}$ ,  $\frac{d^2y}{dx^2} = \frac{2}{9} \frac{2x-3}{(x-1)^{\frac{5}{3}}}$ ,

(4) That the radius of curvature at the origin  $= 3\sqrt[3]{2}$

(5) That the area from  $x = 0$  to  $x = 1$  is  $\frac{9}{28}$ .

(6) Find the points of inflexion.

9. Show that the least value of  $a \tan \theta + b \cot \theta$  is  $2\sqrt[4]{ab}$

10. Show that the moment of inertia of a circular arc of length  $s$ , radius  $r$ , and chord  $c$ , about an axis through its middle point perpendicular to the plane of the arc is

$$m \cdot 2r^2 \left(1 - \frac{c}{s}\right).$$

Or, show that that of a paraboloid of revolution (radius of base  $r$ ) about its geometrical axis, is  $m \cdot \frac{1}{3} r^2$ .

## SECOND YEAR.

### MATHEMATICS, III.

TUESDAY, APRIL 21ST:—MORNING, 9 TO 12.30.

Examiner,.....R. S. LEA, M.A.E.

1. Explain the construction of the hodograph of a point's motion.

Find the hodograph when a point moves:—

(a) With uniform speed in a straight line.

(b) With uniform speed in a circle.

(c) With uniform speed along the thread of a screw.

2. An engine is travelling at the rate of 60 miles per hour. Find the velocity of each of the two points on the rim of a wheel 4 feet in diameter, which are 3 feet above the rail.



If the engine is moving round a curve of 2,000 feet radius, and the rails are 5 feet apart, how much must the outer rail be raised above the inner, so that there may be no lateral pressure on the rails?

3. A balloon ascends with a uniform acceleration of 4 feet per second.

At the end of half a minute, a body is dropped from it. Find the time that elapses before the body reaches the ground.

4. A body of mass 12 lbs. is placed on a smooth inclined plane whose height is half its length, and is connected by a light string passing over a pulley at the top of the plane, with a mass of 8 lbs., which hangs freely. Find the distance described by the masses in 5 seconds.

5. Two balls are projected from the same point in directions inclined at  $30^\circ$  and  $60^\circ$  to the horizontal. If they attain the same height, what is the ratio of their velocities of projection?

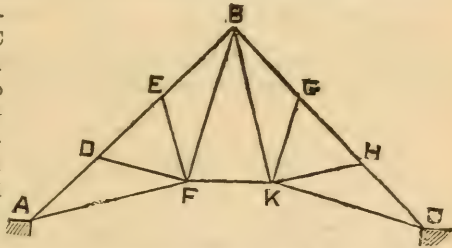
What is this ratio if they have the same horizontal range?

6. Show that the motion of a pendulum swinging through a small arc is approximately simple harmonic.

Find the length of a pendulum which will oscillate 56 times in 55 seconds.

7. From a triangle is cut off  $\frac{1}{9}$ th of its area by a straight line parallel to the base. Find the position of the centre of gravity of the remainder.

8. In the accompanying figure A B and B C are each 30 ft. long and are inclined at  $45^\circ$  to the horizontal. D E G H are points of trisection, and D E F and G H K are equilateral triangles.



A load of 3,000 lbs. is uniformly distributed over each of the rafters. Draw the stress diagram and tabulate the stresses.

What will be the stress in F K if the load on A B is reduced one-half?

## THIRD YEAR.

## MATHEMATICS, I.

FRIDAY, APRIL 17TH:—MORNING, 9 TO 12.30.

*Examiner*, ..... G. H. CHANDLER, M.A.

1. Find the equation of a line which touches the parabola  $y^2 = 4px$  and makes an angle  $\tan^{-1} 3$  with the line  $y = 2x - 1$ .

2. The sum of the squares of a pair of conjugate diameters of an ellipse is constant.

3. Given the conic  $13x^2 + 5xy + y^2 - 3x + y + 1 = 0$ ,

(1) Show that the centre is at  $(\frac{1}{2}\frac{1}{7}, -\frac{4}{2}\frac{1}{7})$ ,

(2) That the principal axes make with the co-ordinate axes an angle whose tangent is  $\frac{1}{5}$ ,

(3) That the equation referred to the principal axes is  $(27x)^2 + 27y^2 = 20$ .

4. State and prove the truth of the formula for finding the angle between two lines whose direction cosines are given.

5. Find the equation of a plane in terms of its intercepts on the axes.

6. Find the equation of a plane passing through the points (1, 1, 1) and (2, 0, -1), and perpendicular to the plane  $x + y - z = 3$ .

7. Show that

$$(1) \int_1^3 \frac{dx}{4x - x^2} = .550,$$

$$(2) \int_2^3 \frac{dx}{\sqrt{x^2 - 4}} = .964,$$

$$(3) \int_{\frac{\pi}{2}}^{\frac{3}{2}\pi} \tan^4 \theta \, d\theta = .119.$$

8. Also that  $\int e^x \sin 2x \, dx = \frac{1}{5} e^x (\sin 2x - 2 \cos 2x)$ .

9. Find the limit of the value of  $\frac{\sin mx}{\sin x}$  and of  $x^n$  as  $x$  approaches 0.

10. Show that

$$(1) \log(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \dots,$$

$$(2) \log(1+y) = \log y + 2 \left[ \frac{1}{1+2y} + \frac{1}{3} \left( \frac{1}{1+2y} \right)^3 + \dots \right],$$

and hence calculate  $\log 2$  and  $\log 5$  to 4 decimal places.

11. Show that the area between the cissoid  $y^2(a-x) = x^3$  and the asymptote is  $\frac{3}{4} \pi a^2$ .

12. Prove one of the following :

(1) The moment of inertia of a circular arc of length  $s$ , radius  $r$ , and chord  $c$ , about an axis through its middle point perpendicular to the plane of the arc is  $m \cdot 2r^2 \left( 1 - \frac{c}{s} \right)$ .

(2) The moment of inertia of a paraboloid of revolution about its geometrical axis is  $m \cdot \frac{1}{4} r^2$ , where  $r$  is the radius of the base.

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### THIRD YEAR.

#### MATHEMATICS, II.

TUESDAY, APRIL 21ST :—MORNING, 9 TO 12.

*Examiner*,..... G. H. CHANDLER, M.A.

1. Explain fully the method of finding  $g$  by means of a reversion pendulum. Prove the truth of the formula used, viz :

$$g = \frac{\pi^2 (h_1^2 - h_2^2)}{t_1^2 h_1 - t_2^2 h_2}.$$

2. Find the speed which would be acquired by a body in falling to the earth's surface from an infinite distance.

3. Find the acceleration of a point which describes a given circle with a given speed.

4. A clock is taken to the bottom of a mine, and is found to gain 5 sec. per day. What is the depth of the mine ?

5. The force necessary to haul a train at uniform speed on a one per cent. grade is  $3\frac{1}{2}$  times that on the level. Show that the coefficient of friction is .004, approximately.

6. Express a foot-pound in joules, and a horse-power in watts.

7. Show that to give a train a speed of 20 miles an hour requires the same energy as to lift it vertically through a height of 13.4 feet.

8. What is meant by precession? Explain the cause of the precessional motion, illustrating by reference to a gyroscope.

9. A row of  $n$  equal elastic balls are placed in contact in a straight line, and an equal ball impinges directly on them with the velocity  $u$ . Prove that the velocity of the last ball will be :

$$\frac{1}{2^{n-1}} (1 + e)^{n-1} u$$

10. A volume  $v$  of gas at pressure  $p$  is compressed so as to change the pressure to  $P$ , the temperature remaining constant; prove that the work done  $= pv \log \left( \frac{P}{p} \right)$ .

## SECOND YEAR.

### EXPERIMENTAL PHYSICS,—HEAT, LIGHT AND SOUND.

FRIDAY, 10TH APRIL—MORNING, 9 TO 12.

*Examiners*,..... { JOHN COX, M.A.  
H. L. CALLENDAR, M.A.

*(Not more than nine questions to be attempted.)*

1. Explain the advantages and disadvantages of mercury as compared with other liquids for use in the construction of thermometers.

If a centigrade thermometer reads  $+ 0.47^{\circ} \text{C}$ . when in melting ice, and  $99.53^{\circ} \text{C}$ . in steam, when the barometer stands at 760 mm., find the true temperature when the thermometer reads  $20^{\circ} \text{C}$ . below zero.

2. Define the co-efficients of linear and cubical expansion of a solid and prove the relation between them.

If a force of one ton is required to stretch an iron bar 30 feet long by one-tenth of an inch, and if the co-efficient of linear expansion is .000010 per  $1^{\circ} \text{C}$ ., find the force required to prevent the bar contracting when cooled through  $100^{\circ} \text{C}$ .

3. State the laws which govern the changes of volume of a gas when exposed to changes of pressure and temperature, and show how they may be combined into a single formula.

If a litre of air at  $0^{\circ}$  C. and 760 mm. pressure weighs 1.293 grams, find the weight of a cubic foot at  $62^{\circ}$  F and 30 inches. (1 inch = 2.54 cm.)

4. State the laws of change of state of aggregation, and explain how the freezing and boiling points of water are affected by changes of pressure.

If the total heat of steam at  $t^{\circ}$  C, is given by the formula  $H = 600 + .370t$ , find the values of the latent heat of vaporisation at  $50^{\circ}$ ,  $100^{\circ}$ , and  $150^{\circ}$  C.

5. Prove that the elasticity of a gas at constant temperature is numerically equal to the pressure, and explain why this value of the elasticity gives an erroneous value for the velocity of sound.

Describe some experiment for comparing the velocities of sound in different gases, or in solid rods.

6. Describe an experiment for determining the pitch of a tuning fork *either* by means of a moving plate, *or* by means of a stretched wire, *or* by comparison with a resonance tube containing air.

Explain the terms Resonance, Beats, Harmonics.

7. Explain what is meant by a Simple Harmonic vibration. What figures are produced by compounding two such equal vibrations of the same period at right angles? How may these figures be mechanically or optically illustrated? What is the effect of difference of phase, period and amplitude in changing the figures?

8. Compare the explanations of the law of Refraction upon the Corpuscular and the Undulatory Theories with each other and with experimental results.

9. Describe carefully a Reading Microscope. How would you find practically the magnifying powers of (1) the objective, (2) the eye-piece, (3) the microscope?

10. Explain the use of the Collimator in the ordinary spectroscope. How do you proceed to map a spectrum?

11. Explain the formation of the colours of a soap bubble, giving the reason for the appearance of the black spot just before it breaks.

12. Describe and explain the action of :

(a) Nicol's Prism.

(b) Norremberg's Polariscopes.



## B.A. ORDINARY EXAMINATIONS, 1896.

## ELECTRICITY AND MAGNETISM.

FRIDAY, APRIL 10TH :—MORNING, 9 TO 12.

Examiners,..... { JOHN COX, M.A.  
H. L. CALLENDAR, M.A.

(Not more than nine questions to be attempted.)

1. Define strength of Magnetic Field and Intensity of Magnetisation. How may the variations of the horizontal strength of the Earth's field in different parts of a laboratory be determined?

2. Describe the nature of the magnetic field due to a current in a circular wire. Find the strength of the field at the centre, and show how it varies at points along the axis of the coil.

3. A current which deposits 4 grammes of copper per hour gives a deflection of  $45^\circ$  on a tangent galvanometer of one turn of 30 cm. diameter. If the electro-chemical equivalent of copper is .00329 gramme per ampere second, find the value of H. Explain the terms used, and give the laws on which the experiment is based.

4. Describe the Gravity Daniell and the LeClanché cell. What are their advantages and defects for different kinds of work?

5. If two conductors of known resistance are connected in parallel apply Ohm's law to find the proportion in which the current is divided between them.

The deflection of a tangent galvanometer falls from  $60^\circ$  unshunted to  $30^\circ$  when shunted, with a resistance of 100 ohms. If the resistance of the rest of the circuit is 1000 ohms, find the resistance of the galvanometer.

6. A 16 c.p. 100 volt. incandescent lamp generates heat sufficient to melt one kilogramme of ice in one hundred minutes. Find the resistance of the lamp and the power absorbed by it. (One gramme degree C is equivalent to  $42 \times 10^6$  ergs. Latent heat of fusion of ice = 80 C.)

7. Sketch the lines of force due to bar magnet placed horizontally E. and W. in the Earth's field.

If a flat strip of copper carrying a current be introduced edgewise between the poles of a horseshoe magnet, how will the distribution of the current in the strip be affected, (a) while it is being introduced, (b) after the motion has ceased?

8. If a single wire frame half a meter square was revolving uniformly 600 times a minute in a field  $B = 10,000$  C.G.S., what would be the general character and the average value in volts. of the E.M.F. induced in it?

Explain how the coils are connected to the commutator in either a ring or a drum armature, so as to make the current nearly uniform and continuous.

9. Describe the construction of a Post Office resistance box. Explain the principle and the method of using it to measure a resistance. How may it be used to find the position of a "fault" on a telegraph line, if two wires are broken and lying across one another?

10. Describe a method of comparing the E.M.F.'s of two batteries, either by means of a galvanometer and a resistance box, or by the potentiometer method.

11. Define electrostatic *potential*, and *capacity*. How does the capacity of a Leyden jar depend on the thickness and quality of the glass, and on the area of the coatings? State and prove the formula.

12. Upon what conditions do the length and intensity of an electric spark depend? How is the discharge modified in rarefied gases and in high vacua? Describe the appearance and changes of the striae as exhaustion proceeds, and the general characteristics and effects of cathode rays.

### THIRD YEAR AND B.A. SC. EXAMINATION.

#### THEORY OF STRUCTURES (PAPER I).

Examiners, ..... { HENRY T. BOVEY, M. INST. C.E., LL.D.  
H. BAMFORD, M.Sc.

1. The swivelling crane shown in the accompanying figure is loaded with one ton at each of the joints 1, 2, 3, 4, 5, 6; and with 5 tons at 7. Determine, by means of the Funicular polygon, the line of action of the resultant load; and draw the reciprocal diagram of stress.

2. Draw the reciprocal diagram of stress for the roof truss shown in the figure, when acted upon by,—(a) vertical loads only; (b) inclined loads, due to the pressure of wind blowing from the left; the reaction at the right hand support being vertical.

3. The figure represents a factory truss subjected to a load of one ton at each of the joints b, c, d and e;  $ab = be = ed = de = ef$ , and the apex angle =  $90^\circ$ . Determine, graphically, the reactions at the supports; and draw the reciprocal stress diagram.

4. Draw the stress diagram for the accompanying truss, the load upon each of the points B, C and D being 500 lbs. Also,  $AF = \frac{1}{2} FG = 6\text{-ft.} = GE$ . Show how the diagram may be modified if the member CF is removed.

5. Show how to draw a "Culmann Diagram" for a beam supported at both ends and loaded with a series of concentrated loads, and prove that the vertical ordinate  $mn$  of this diagram, drawn through any point  $D$  in the beam, is proportional to the bending moment at  $D$ .

6. Draw the reciprocal diagram of stress for the lock-jointed truss shown in the accompanying figure when acted upon by—(a) vertical loads only, (b) inclined loads, due to the pressure of wind blowing from left; the reaction at the right hand support being vertical.

7. A five-panel Warren girder of 50-ft. span and 10-ft. deep carries a uniformly distributed load of 50 tons, and a concentrated load of 5 tons at the second panel point. Draw the reciprocal stress diagram for the truss, and determine, independently, and by the method of sections, the stress in the bars forming the central triangle.

8. Two wheels  $A$  and  $B$  five feet apart, and carrying loads 10 tons and 20 tons respectively, travel over a beam of 100 ft. span. Determine, graphically, the maximum B.M., at 10 ft. and 20 ft. from a support, and the absolute maximum B.M. in the beam.

### THIRD AND FOURTH YEAR EXAMINATIONS.

#### THEORY OF STRUCTURES (*Paper II.*).

Examiners,..... { HENRY T. BOVEY, M. INST. C.E., LL.D.  
H. BAMFORD, M. SC.

1. Define the terms "statical strength," "primitive strength" and "vibration strength," as applied to a bar subjected to varying and repeated loads.

The stress in a diagonal of a bridge truss varies from 7,000 lbs. to 30,000 lbs. Using the formula  $u = u \left( 1 + \frac{9}{11} \phi \right)$ , determine the requisite sectional area of the diagonal, allowing a factor of safety of 3, and taking  $u = 47,000$  lbs. per square inch.

2. Explain what is meant by "centrifugal force."

A steel coupling rod of a locomotive is 10 ft. long and has a I cross section 2"  $\times$  4" deep  $\times$  .5" thick. The crank radius being 12" and the diameter of the driving wheels 6 ft.; determine the maximum intensity of stress in the rod for a speed of 80 miles an hour.

3. A steamer of 1,000 tons displacement sailing due east at 20 miles an hour, collides with a steamer of 2,000 tons displacement sailing due west

at 16 miles an hour. Find the energy of collision. What would the energy be if the second steamer were sailing due north or south at the same rate?

4. Prove the formula  $M = \frac{E}{R} I = \frac{f}{c} I$ .

In a band saw, the steel band is .5 in. wide and .02 in. thick, and passes over two pulleys each 12 in. in diameter. If the tension on the tight side be 100 lbs., determine the maximum intensity of stress in the band.

5. A red pine beam, 150 ins. between centres of supports, is rectangular in section, 12 ins. deep and  $5\frac{3}{4}$  ins. wide. It was loaded at the centre, and the load was gradually increased from 1,000 lbs. to 5,000 lbs., the corresponding increment of the deflection being .173 ins. Find the co-efficient of elasticity. The beam failed under an ultimate load of 21,000 lbs. at the centre; find the corresponding skin stress, taking into account the compression which amounts to .2 in.

6. Determine the profile of a cantilever 10 ft. long, triangular in section, and having a constant width of base; the co-efficient of strength being 400 lbs. per sq. inch and the load 200 lbs. per lineal foot. Find the deflection at the free end.

7. Prove the formula  $q w = \frac{S}{I} A \bar{y}$

A steel beam consists of a web 20 ins. deep connected with two flanges each  $6\frac{1}{2}$  ins.  $\times$  1" by means of four angle-irons each 3 ins.  $\times$  3 ins.  $\times$   $\frac{1}{2}$  in. Determine the moment of resistance and the intensity of longitudinal shear 10 ins. from the neutral plane, the co-efficient of strength being 10,000 lbs. per square inch.

8. Explain how to design a cast iron beam of double tee-section.

9. Enunciate and prove Gordon's Formula.

A hollow cast-iron pillar, 15 ft. in length, has to support a steady load of 80,000 lbs.; its internal diameter being 6 ins., determine the external diameter, the factor of safety being 6. ( $f = 80,000$  lbs. per sq. inch  
 $\frac{600}{a}$ )

10. Deduce the hollow shafting formula,  $M = \frac{\pi}{16} f \frac{D_1^4 - D_2^4}{D_1}$

Deduce the external diameter of a hollow shaft having an internal diameter of 12 ins., and of the same strength as a solid 10 in. shaft.

Compare their relative weights per unit length.

11. At a point within a strained solid the stress on one plane is a tension of 50 lbs. per square inch with an obliquity of  $30^\circ$ ; and upon another plane, a compression of 100 lbs. per square inch with an obliquity of  $45^\circ$ . Determine the principal stresses, and the angle between the two planes. Also, sketch the ellipse of stress for the given point, and mark the positions of the two planes upon it.

12. A reservoir wall is 4 ft. wide at the top, 7 ft. at the base, and is 16 ft. high. Determine the position of the centre of pressure, and the maximum intensity of pressure over the base, when the depth of water is 15 ft; the face of the wall presented to the water being vertical, and the weight of wall per cub. foot being 125 lbs.

### B. A. SC. EXAMINATION.

#### THEORY OF STRUCTURES (PAPER III.)

FRIDAY,—9 A.M.

*Examiners*,..... { HENRY T. BOVEY, M.INST.C.E., LL.D.  
                                  { H. BAMFORD, M.SC.

1. In a 5 panel double intersection through bridge with single track and of 120-ft. span, the panel, engine, train and bridge loads are 60, 36 and 24 tons respectively. Determine the maximum stress in every member of the 2nd panel made by a vertical plane when the depth is (a) 24-ft., (b) 36-ft.

2. Design a cross-tie 13-ft. long for the bridge in the preceding example.

3. If the load upon the cable of a suspension bridge is of uniform intensity per horizontal unit of length, show that the curve in which the cable hangs is a parabola. Show also how to find the pull upon the cable at any point. Design a stiffening truss hinged at the centre for the cable in question.

4. The load upon a parabolic rib of 64-ft. span and 16-ft. rise, hinged at both ends, consists of weights of 2, 4 and 2 tons at points 16, 32 and 48 feet respectively from one end. Find the axial thrusts and shears at these points.



THEORY OF STRUCTURES (HONOURS).

7. The front face of a wall is plumb, and the rear face, which retains water level with the top of the wall, has a batter. The density of the wall is twice that of the water. If the width of the base is  $N$ -times the width of the top, find the deviation of the centre of pressure in the base from the middle of the base, and if this deviation is  $\frac{1}{4}$ th of the thickness of

the base, show that the height of the wall is  $(N^2 + 1)^{\frac{1}{2}}$  times the width of the top and find the maximum intensity of pressure in the base.

8. Show how to find the profile of a reservoir wall of uniform strength.

9. A long vertical column of uniform section has both ends fixed. Find the least load upon the column which will cause it to bend laterally.

### B. A. SC. EXAMINATION.

#### HYDRAULICS. (*Paper I.*)

TUESDAY,

1896 :—MORNING, 9 A.M.

Examiners, ..... { HENRY T. BOVEY, M. INST. C.E., LL.D.  
H. BAMFORD, M.Sc.

1. What is meant in hydraulics by a "head of water?"

An accumulator with a ram of 7 ins. in diameter and a stroke of 10 ft., is loaded until the pressure is 1,000 lbs. per sq. inch. What is the equivalent head of water? How much energy has been stored up when the ram is at the top of the stroke?

2. Remark briefly upon the various co-efficients of correction, and deduce the relation between the co-efficient of velocity and the co-efficient of resistance.

A jet of water issues horizontally from a circular orifice  $\frac{1}{2}$  in. diameter under a head of 20 ft. and at 10 ft. from the orifice the axis of the jet is 15.324 ins. from the highest point of the jet. Find the co-efficient of velocity.

3. State and prove Bernoulli's Theorem. What are the assumptions upon which it is based?

A water pipe gradually contracts from 6 ins. diameter at *A*, to 1 in. at *B*, and then gradually expands; if the "pressure heads" at *A* and *B* be 100 ft. and 20 ft. respectively, what quantity of water is flowing through the pipe per second?

4. What is meant by "loss of energy in shock?"

At a certain point in a line of piping the sectional area is suddenly increased from 12 sq. ins. to 24 sq. ins. Find the "loss in shock," the quantity of flow being 10 cub. ft. per second.

5. The wetted surfaces of two vessels *A* and *B* of similar form and surface are 10,000 sq. ft. and 500 sq. ft. respectively. If the resistance of *B* at a speed of 5 knots per hour be 150 lbs., what will be the resistance of *A*, and what will be the power required to propel her at a speed of 18 knots per hour (a knot = 6,056 ft.)

6. Obtain an expression for the discharge through a triangular notch.

The angle of a triangular notch being  $90^\circ$  and the head of water 24 ins., determine the discharge in gallons per hour. ( $c = 0.62$ ).

7. A stream 40 ft. wide and 5 ft. deep discharges across a vertical section at the rate of 1,200 cubic ft. per second; a weir is built in the stream increasing its depth to 10 ft. Find the height of the weir, taking into account the velocity of approach.

8. 3,000 gallons of water per minute flow through a pipe 10,000 ft. long under a total head of 250 ft. Find the diameter, taking  $f$  to be .005. Take into account the loss due to resistance at entrance.

9. Find the time required to empty a reservoir with vertical sides and of 10,000 sq. ft. horizontal sectional area, through four horizontal pipes, each 12 ins. in diameter and 100 ft. long. The depth of the water over the axes of the pipes is 20 ft., and take  $f$  to be .0064.

10. If  $Q$  be the quantity of the flow through a pipe of length  $l$  and diameter  $d$ , determine the change in  $Q$  by doubling the diameter for half the length.

11. Deduce the formula for the flow in an open channel. How is the result affected by a wind blowing up or down the stream?

The bed of an open channel has a slope of 1 in 800 and a sectional area of 100 sq. ft. If the sides slope at an angle of  $45^\circ$  determine the depth at which the velocity of flow will be a maximum. Also determine the maximum discharge in gallons per hour. ( $f = .08$ ).

12. The base of a play pipe which terminates in a 1 inch nozzle is 6 ins. in diameter, the pressure at the base being 200 lbs. per sq. inch and the co-efficient of discharge 0.9, determine the discharge, the force required hold the pipe in position, and the power expended.

13. A stream of water moving with a velocity of 15 ft. per second strikes obliquely against a flat vane and drives it with a velocity of 10 ft. per second in the direction making an angle of  $45^\circ$  with the direction of the impinging stream. Find the maximum efficiency and the velocity with which the water leaves the vane.

## B.A.Sc. EXAMINATION.

## HYDRAULICS (PAPER II.)

TUESDAY, 2.30 P.M.

Examiners,..... { HENRY T. BOVEY, M. INST. C. E., LL.D.  
H. BAMFORD, M.Sc.

1. A half inch jet of water moving at the rate of 150 ft. per second impinges on the buckets of a Pelton wheel, and is turned through an angle of  $150^\circ$ . If the mean diameter of the wheel be 16 ins., determine its speed for maximum efficiency. Also determine the maximum efficiency and the power of the wheel.

2. 400 cub. ft. of water per minute enter the buckets of an overshot water-wheel of 40 ft. diameter; the velocity at point of entrance is 16 ft. per second, and the angle between the radius to this point and the vertical is  $12^\circ$ . The angle between the direction of the jet and the direction of the wheel's motion is  $10^\circ$ , and the angles between the horizontal and the radii to the points where spilling commences and ends are  $50^\circ$  and  $90^\circ$  respectively. The speed of the wheel's periphery being 9 ft. per second, and the weight of the wheel 20,000 lbs., determine,—the useful work done, the energy expended and the efficiency; the diameter of the axle being 6 ins.,  $\mu = .04$  and  $k = \frac{1}{2}$ .

3. The internal and external diameters of an outward-flow turbine are 4 ft. and 5 ft. respectively, and the depth 9 ins. The inclination of the guide vanes to the wheel's periphery is  $30^\circ$ ; and the wheel vanes are radial at the inlet surface. The effective head being 25 ft., determine the speed of the wheel, the quantity of water used per second, the inclination of the discharging lips of the wheel vanes, the power of the turbine, and the hydraulic efficiency (Assume final velocity of whirl nil).

4. The internal and external diameters of a centrifugal pump are 12 ins. and 24 ins. respectively, and the depth 6 ins.; the inclination of the vanes to the wheel's periphery at the outlet surface being  $30^\circ$  and the gross lift 30 ft. Determine the speed, the efficiency, and the discharge per minute.

5. A reaction wheel (Scotch Turbine) has two orifices each 2 ins. in diameter and 12 ins. from the axis of rotation. The available head being 9 ft., find the power and efficiency of the wheel at 150 revols. per minute.

6. Show how to determine the efficiency of a Breast wheel.

## B.A.Sc. EXAMINATION.

## HYDRAULICS (HONOURS).

Examiners,..... { HENRY T. BOVEY, M. INST. C.E., LL.D.  
H. BAMFORD, M.Sc.

1. Taking into account the effect of viscosity, show that when water flows through a pipe, the velocity ( $u$ ) at any point of a cross-section is given by the ordinate to the parabola,  $u_{\max.} - u = D x^2$ .  $D$  being a constant,  $x$  the distance of the point from the centre of the pipe and  $u_{\max.}$  the velocity at the centre.

2. A 12-in. pipe, 6000 ft. long, connects two reservoirs A and B, the surfaces of water in which are respectively 200 ft. and 50 ft. above datum. Determine the discharge in gallons per hour.

A third reservoir C (to be used in case of fire) is to be connected to the pipe at a point D; determine the position of D, so that under normal conditions the surface of the water in C shall remain at a constant height of 100 ft. above datum.

3. The internal and external diameters of an inward flow turbine are 12 inches and 24 inches respectively; the head 15 ft., inclination of guide vanes  $30^\circ$ , depth 6 inches, and the vanes are radial at the inlet surface. Determine the inclination ( $\beta$ ) of the vanes at the outlet surface, so that the final velocity of whirl shall be nil. Also, determine the best speed of wheel, the corresponding power and efficiency.

Determine the efficiency and final velocity of whirl at half the normal speed.

4. If the turbine in the last question be worked as a pump, determine the efficiency, lift, and discharge, at a speed of 400 revols. per minute. By how much would the efficiency be increased if the fan were enclosed in a vortex chamber and the water delivered at a point 2 ft. from the centre?

## FOURTH YEAR EXAMINATION.

## HYDRAULIC LABORATORY.

SATURDAY, MARCH 28TH:—MORNING, 9 TO 12.

Examiners,..... { HENRY T. BOVEY, M. INST. C.E., L.D.  
H. BAMFORD, M.Sc.

1. Describe, with the aid of sketches, the apparatus you would require, and the manner in which you would determine the co-efficients of velocity and discharge of a jet of water issuing from a sharp-edged circular orifice in the vertical face of a tank.



2. Explain how you would proceed to determine the force of impact and the co-efficient of impact, of a jet of water impinging upon a fixed curved surface. In what manner does the co-efficient of impact depend upon the diameter of the jet? Why?

3. If you were provided with two pipes of the same diameter and length, the one straight, and the other provided with bends, explain, with the aid of sketches, what apparatus you would require, and the manner in which you would proceed to determine the resistance of the bends to the flow of water.

4. Sketch and describe a weir-depthing machine, and explain how it is used.

5. Describe, fully, how you would conduct an experiment for determining the co-efficient of discharge of water flowing over a weir and the effect of the end contractions. In what manner do the end contractions, and the co-efficient of discharge, depend upon the head?

6. Sketch and describe a Pelton wheel, and explain how you would proceed to determine its efficiency. Obtain formulæ for the power and efficiency of the wheel.

### THIRD YEAR, ELECTRICAL ENGINEERING STUDENTS.

#### PHYSICAL LABORATORY WORK.

WEDNESDAY, APRIL 22ND :—2 TO 5 P.M.

Examiners,..... { JOHN COX, M.A.  
H. L. CALLENDAR, M.A.

*(Not more than six questions to be attempted.)*

*Give Diagrams of Electrical connections in all cases.*

1. Describe the method of measuring the moment of a magnet by the torsion of a wire. How may the coefficient of torsion of the wire be determined? Prove the formula.

2. Explain the principle of Gauss's method of verification of the law of the inverse square for a pair of magnets, and prove the approximate formulæ for the "end-on" and "broadside-on" positions.

3. Describe and explain the sine method of calibrating a galvanometer. If the instrument has a fibre suspension, show how to correct the results for the torsion of the fibre, if the angle is measured by allowing the needle to swing back into the meridian.

4. Describe the method of finding the specific resistance of a sample of wire by means of a B.A. bridge and standard coil. If a wire one metre long and one millimetre in diameter has a resistance of one ohm, find the specific resistance of the material in microhms.

5. Describe Carey Foster's method of calibrating a bridge-wire. Point out the advantages of the method, and show how to draw a curve giving the correction to be applied at any point of the wire.

6. Describe the Kohlrausch apparatus for measuring the resistance of an electrolyte. What is the advantage of using a telephone? Explain why a single Daniell cell cannot send a current through a sulphuric acid voltmeter.

7. A Clark cell (E.M.F. 1.43 volts.) through one megohm, and a galvanometer shunted with 1/9th of its resistance, gives a deflection of 200 scale divisions when the time of swing is 5 seconds. Ten Clark cells through a slate insulator give a deflection of 10 scale divisions with the galvanometer unshunted. Find the insulation resistance of the slate, and the figure or merit of the galvanometer with a 20 second swing.

8. Explain how a galvanometer may be used for measuring the total quantity of a transient current. What is the effect of damping? Explain the term logarithmic decrement, and show how the correction for damping may be determined and applied.

9. Describe and contrast the deflection method and the null method of comparing the capacities of two condensers.

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### B.A. Sc. EXAMINATION.

### ELECTRICAL ENGINEERING.

### PHYSICAL LABORATORY WORK.

FRIDAY, APRIL 17TH :—2 TO 5 P.M.

*Examiner*,..... H. L. CALLENDAR, M.A., F.R.S.

*(Not more than six questions to be attempted. Diagrams of electrical connections should be given in all cases).*

1. Describe, either the Kew. Magnetometer or the Kohlrausch Unifilar Variometer. Give the theory of the instrument, and explain the precautions necessary to eliminate the effects of torsion.

2. Explain the use of, and the method of adjusting, the control magnet of a reflecting galvanometer.

If the  $N$  pole of the needle points  $N. W.$  when the spot is at zero, and when the control magnet, at a height of 20 cm above the needle, makes an angle of  $15^\circ S.$  of  $W.$ ; find the moment of the control magnet, if  $H = .160 C. G. S.$  What other position is possible at the same height? Compare the controlling force in the two cases, and give the height and position of greatest sensitiveness.

3. Describe the method of finding the hysteresis loss of a sample of iron in the  $H$  and  $W$  position, by means of a magnetometer. What are the advantages and defects of the method, as compared with the vertical position?

4. How should the construction of the Board of Trade Clark Cell be modified to get rid of the effects of diffusion-lag? Explain the nature and extent of this phenomenon, and describe a method of accurately determining the temperature co-efficient.

5. Describe and contrast the construction and behaviour of the Crompton Howell and the Chloride type of storage cell. Explain the changes of density which occur in charging and discharging. Under what conditions does "sulphating" take place, and how may it be prevented or remedied?

6. Describe a method of measuring the specific resistance of a sample of copper bar. State the precautions essential to accuracy, and explain the temperature corrections to be applied.

7. In the commutator-bridge method of comparing standard resistances, how should the observations be conducted to eliminate current-heating and thermo-electric effects? Describe the method of calibrating the bridge-wire and of determining the temperature co-efficient of a standard coil.

8. What are the causes which operate to change the readings of a permanent magnet voltmeter or ammeter with lapse of time or variations of temperature? What materials should be used for the resistances in the construction of a voltmeter and ammeter respectively, and how should they be arranged and adjusted to minimise or annul the temperature effect?

9. What instruments and method would you employ for the accurate calibration of a 15 ampere range ammeter? What corrections should be applied to the observations, and how should the results be expressed?

10. Describe a method of testing Fuse wires. Compare the behaviour of silver, copper and lead fuses. Give the theoretical basis of the law, "fusing-current varies as the square root of the cube of the diameter," and explain the departures from the law in the case of very thin or very short wires.

11. Describe the construction of either a voltmeter or an ammeter on the hot-wire principle. What are the advantages and defects of these instruments? How may they be compensated for temperature error, and how may the readings of a single instrument be multiplied, so as to cover a large range?

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B.A.Sc. EXAMINATION.

GEODESY AND PRACTICAL ASTRONOMY (*First Paper*).

MONDAY, APRIL 6TH:—9 TO 12 A.M.

Examiners, ..... { C. H. McLEOD, MA.E.  
J. G. G. KERRY, MA.E.

1. Obtain the general formula for the astronomical transit. (*a*) Give from the star list, any six stars between 6 h and 7 h right ascension which you would employ in a time observation, and the position in which you would observe them. Give your reasons for the choice you make.

2. Discuss the zenith telescope method of latitude observation, its advantages and possible errors. (*a*) Select a pair of stars which you could observe this evening in latitude  $45^{\circ} 30' N$  with a telescope having a field of  $40'$  of arc.

3. Explain and illustrate by example the Nadir (reflection from mercury) method of measuring the collimation and inclination errors of a transit instrument.

4. Outline briefly two of the most recent methods of measuring base lines on primary triangulation surveys.

5. Calculate the convergence of terrestrial meridians distant 10 miles in longitude, in latitude  $60^{\circ}$ .

6. Suppose the azimuth of a line is to be measured by observations on the Sun with a sextant. What angles would you measure, and how would you compute the required horizontal angle?

7. Suppose you are occupying station A, from which stations B, C and D in a trigonometrical survey are visible. Explain how you would measure the several angles with a direction theodolite.

8. Explain the measurement of the eccentricity of a graduated circle, with two microscopes, and obtain the formulæ required for the calculation.

## FOURTH YEAR.

GEODESY AND PRACTICAL ASTRONOMY (*Second Paper*).

MONDAY, APRIL 6TH:—2 TO 5 P.M.

Examiners,..... { C. H. McLEOD, MA.E.  
J. G. G. KERRY, MA.E.

1. The distance between *A* and *B* is 155,580 feet. The latitude of *A* is  $45^{\circ} 30' 18''$ , and the azimuth of *B* from *A*, N.  $69^{\circ} 10'$  W. Calculate the latitude of *B* on the sphere.

2. The sun was observed to have an altitude of  $30^{\circ} 30' 30''$  at  $3^h 0^m 0^s$  local time after noon on April 1st, 1896, in west longitude  $7^h 30^m$ . Calculate the latitude of the place.

3. Make the necessary measurements and calculate the value of the eccentricity of the theodolite circle.

4. Find the error of the sidereal clock at Montreal from the chronograph slip and meantime clock error, given you.

## B.A.Sc. EXAMINATION.

SURVEYING AND PRACTICAL ASTRONOMY (*First Paper*).

TUESDAY, APRIL 7TH:—MORNING 9 TO 12.

Examiners,.... { C. H. McLEOD, MA.E.  
J. G. G. KERRY, MA.E.

1. Suppose the discharge of a large river to be required. Explain how you would conduct the work, using rod floats. State concisely what information is required and your method of obtaining it.

2. Describe a method of sounding in rapid water; and explain how the positions of the soundings are fixed.

3. Show that in trigonometrical levelling, where simultaneous observations at the two stations are made for the purpose of eliminating refraction, the difference in altitude

$$= K \frac{\sin \frac{1}{2} (\delta^1 - \delta)}{\cos \frac{1}{2} (\delta^1 - \delta + O)}$$

where  $\delta$  and  $\delta^1$  are the observed zenith distances,  $K$  the chord distance between the stations and  $O$  the angle subtended by  $K$ .

4. Suppose a field which is roughly of hexagonal form and which is to be divided into two parts in a given ratio by a line running from one of the angles; how would you compute the direction of the line?



5. Suppose the azimuth of a line is to be measured by means of a sextant and observations on the sun. What angles would you measure and how would you compute the required horizontal angle?

6. Mention some of the sources of error in precise levelling and the means you would adopt to obviate them.

7. The following are the observed angles of a quadrilateral :—

$A_1 = 38^\circ 20' 25''$ ;  $A_2 = 49^\circ 57' 30''$ ;  $B_3 = 50^\circ 02' 10''$ ;  $B_4 = 35^\circ 10' 30''$ ;  $C_5 = 44^\circ 49' 20''$ ;  $C_6 = 44^\circ 49' 30''$ ;  $D_7 = 55^\circ 10' 30''$ ;  $D_8 = 41^\circ 39' 45''$ .

Apply the angle equation adjustment, and explain how you would apply the side-equation adjustment.

8. What are the declination limits of stars having elongations, in latitude  $55^\circ 00' N$

9. Show that the correction in hour angle due to the inclination  $b$  of the axis of a transit instrument is,  $b \cos z \cdot \sec \delta$ . (a) When is this correction to be added to observed time, and when subtracted from it?

10. In observing with an astronomical transit in the meridian, describe one method of determining each of the following :—Equatoreal wire intervals, inclination of axis, collimation error, azimuth error.

11. Explain briefly three methods of determining latitude, and show how the final result is obtained in each case, giving all necessary formulæ and corrections.

12. Give the formula for the probable error of the arithmetic mean of a set of measurements. (a) How do you obtain the relative "weight" of two measurements of the same quantity? (b) Show by an example how to obtain the most probable value from two such measurements.

### THIRD YEAR.

#### SURVEYING AND PRACTICAL ASTRONOMY (*Second Paper*).

TUESDAY, APRIL 7TH :—2 TO 5 P.M.

Examiners, ..... { C. H. McLEOD, M.A.E.  
J. G. G. KERRY, M.A.E.

1. A road 18 feet wide with side slopes  $1\frac{1}{2}$  to 1 is to be built on the following ground :—

Sta. 1. Centre height 106.9 slopes downwards to left at about 1 in 7,  
slopes upwards to right at about 1 in 9.

Sta. 2. Centre height 107.6 slopes downwards to left at about 1 in 36,  
slopes upwards to right at about 1 in 14.

Sta. 3. Centre height 102.3 level to left,

slopes upwards to right at about 1 in 19.

The gradient height at Station 1 is 112.0, and declines at 0.6 per 100. Make out a set of notes setting out the work, and calculate the quantities (1) by end areas, (2) by prismoidal formulae.

2. Determine the index error of the sextant.

3. A six degree circular curve has transition ends. The apex angle is  $34^{\circ} 48'$ . Find the length of the whole curve and the lengths of the sub-tangents. (a) Give notes for setting out one transition end of the curve. Suppose it to be necessary to set the instrument at a point 120 feet from the beginning of the transition curve.

4. The distance between the stations 5 and 6 is ——. Determine the distance between 2 and 7 by angular measurements at 5 and 6.

5. Determine the stadia constants of the telescope.

6. The following current meter observations were made on drawing the meter through still water :—

| Time interval.                 | Distance. | No. of intervals between rings. |
|--------------------------------|-----------|---------------------------------|
| 6 <sup>m</sup> 59 <sup>s</sup> | 353 ft.   | 8                               |
| 5 54                           | 364       | 9                               |
| 3 48                           | 314       | 8                               |
| 2 40                           | 306       | 8                               |
| 2 15                           | 375       | 10                              |

In a river, where the depth is 21 feet, the following observations were made. At surface time between rings, 21 seconds.

|          |   |   |   |      |
|----------|---|---|---|------|
| " 4 feet | " | " | " | 15 " |
| " 8 "    | " | " | " | 19 " |
| " 12 "   | " | " | " | 24 " |
| " 16 "   | " | " | " | 32 " |
| " 20 "   | " | " | " | 45 " |

Calculate the mean velocity of the current.

7. Calculate the clock error from the following star transits :

| Lamp West. |                    |       |                    | Lamp East.         |             |                    |  |
|------------|--------------------|-------|--------------------|--------------------|-------------|--------------------|--|
| $\delta$   | + $31^{\circ} 14'$ |       | + $56^{\circ} 57'$ | + $62^{\circ} 19'$ |             | + $21^{\circ} 06'$ |  |
| A          | + 0.29             |       | — 0.37             | — 0.62             |             | + 0.44             |  |
| B          | + 1.13             |       | + 1.80             | + 2.06             |             | + 0.97             |  |
| C          | + 1.17             |       | + 1.84             | + 2.16             |             | + 1.07             |  |
| T          | 10 43              | 05.69 | 10 58 39.38        | 11 00 25.64        | 11 11 34.63 |                    |  |
| a          | 10 40              | 04.23 | 10 55 34.47        | 10 57 19.69        | 11 08 33.88 |                    |  |

$$b = + 0.52 \text{ sec.}$$

8. What is the standard mean time corresponding to  $14^h 25^m 30^s.5$  sidereal time, in longitude  $4^h 54^m 18^s.65$  west, to-day?

NOTE.—Omit any one of the questions 1, 3 and 6.

## SECOND YEAR.

### SURVEYING (*First Paper*).

WEDNESDAY, APRIL 8TH:—9 TO 12 A.M.

Examiners,..... { C. H. McLEOD, MA.E.  
J. G. G. KERRY, MA.E.

1. What are latitudes and departures? Determine a formula for calculating areas with them.

2. Explain why a Wye level cannot be adjusted by the Wye adjustments if the collars are not of equal diameter.

3. There are two pegs 760 ft. apart. A level is set up close to *A* and the reading on *A* is 7.64 and on *B* 2.19; it is then set up close to *B*, and the reading on *A* is 9.52 and on *B* 4.17. What is the true difference of height between *A* and *B*? Prove your method.

4. Mention what parts and attachments you consider most necessary to the plane table? What is the principal hindrance to rapid work with the plane table?

5. Describe one method of determining the astronomical meridian with an engineer's transit, proving the necessary formulæ. What special arrangements are necessary for this work?

6. Mention all the precautions necessary to insure accurate chaining. Give equivalent values of units of length and area in the old French Gunter and Metric systems.

7. Discuss briefly the relative advantages and disadvantages of the compass and the transit in angular surveying.

8. On the plan of an old magnetic survey, a line is found marked  $N 20^{\circ} 19' W$ , and on sighting along it the compass reads  $N 4^{\circ} 13' E$ . What is the reason of this? How would you retrace the obliterated lines of the survey whose bearings were  $S. 87^{\circ} 10' E$ ,  $S 86^{\circ} 18' W$  and  $N 45^{\circ} 17' E$ .

9. Describe briefly three methods of determining the cross section of ground on each side of the centre line, specifying all instruments used.

10. On a survey a point *A* is invisible from a point *B* on the line *BC*. It is required to find the length of the line *AB* and the angle it makes with *BC*. Describe clearly how you would ascertain these values, (1) with a chain only, (2) with transit and chain.

## SECOND YEAR.

SURVEYING (*Second Paper*).

WEDNESDAY, APRIL 8TH:—2 TO 5 P.M.

*Examiners*,..... } C. H. McLEOD, MA.E.  
 } J. G. G. KERRY, MA.E.

1. Draw accurately an arc of  $20^\circ$  graduated to every  $30'$  and on it a retrograde vernier reading to minutes and set at  $15^\circ 43'$ . The radius of the arc is to be six inches.

2. The constant of a pair of stadia wires is 99.0; the principal focal length of the lens is 0.9; and its distance from the centre of the instrument 0.6. The instrument was set up over a point inside a five-sided field, and the following observations were made to the corners of the field. Calculate the area of the field.

| Corner | Horizontal circle reading | Upper wire | Lower wire | Vertical angle. |
|--------|---------------------------|------------|------------|-----------------|
| 1      | $94^\circ 00'$            | 4.80       | 3.47       | $0^\circ 00'$   |
| 2      | $137^\circ 17'$           | 5.04       | 3.23       | $+12^\circ 12'$ |
| 3      | $201^\circ 13'$           | 4.75       | 3.51       | $0^\circ 00'$   |
| 4      | $287^\circ 00'$           | 5.36       | 2.91       | $-16^\circ 18'$ |
| 5      | $343^\circ 20'$           | 4.97       | 3.30       | $0^\circ 00'$   |

3. The distances of points A and B from the transit will be given. Determine, by aid of the transit and calculation, the length of AB.

4. Examine all the adjustments of the Wye level, reporting the direction and amount of each error when possible.

5. Determine the constant of the double image micrometer.

6. Examine the adjustments of the magnetic needle, and report their condition. Reverse the polarity of the needle, and leave it as far as possible in a satisfactory working condition.

## FIRST YEAR.

## GEOMETRICAL DRAWING.

WEDNESDAY, APRIL 8TH:—9 TO 11.30 A.M.

*Examiners*,..... } C. H. McLEOD, MA.E.  
 } CECIL B. SMITH, MA.E.

(1) Construct, geometrically, a triangle of two inches altitude, having a vertical angle of  $60^\circ$  and a base of three inches.

(2) From a point distant two inches from the centre of a circle of one and one-half inches radius, draw a tangent to the circle, (a) using the centre, (b) without using the centre. Also write down the scaled length of the tangent.

(3) Two circles are distant three inches centre to centre, and have radii of one inch and one and one-quarter inches; draw a circle of 4 inches radius, including and touching them.

(4) Three points at the angles of a triangle of sides of two inches, one and one-half inches, and one and one-quarter inches, are centres of touching circles; draw the circles and write down the scaled length of the radii.

(5) Inscribe a pentagon in a circle of two inches diameter.

(6) Construct an ellipse approximately by means of circular arcs. The major and minor axes being three and one-half inches and two and one-quarter inches respectively.

(7) Construct a parabola of four inches extreme length and three inches extreme width.

(8) Draw the epicycloid generated by a point in the circumference of a circle of one inch radius, rolling on the outside of a circle of four inches radius.

(9) Construct the superior hypotrochoidal curve generated by a point one inch distant from the centre of a circle of one inch diameter as it rolls around the inside of the circumference of a circle of four inches radius.

(10) Draw a cycloid generated by a circle of two inches diameter, and obtain its involute for  $180^\circ$ , beginning at a point on the directing line.

NOTE.—10 per cent. will be given for neatness and accuracy in drafting.

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## FIRST YEAR.

### PROJECTION.

SATURDAY, APRIL 11TH:—9 A.M. TO 12.30 P.M.

Examiners,..... { C. H. McLEOD, MA.E.  
CECIL B. SMITH, MA.E.

1. Draw the plan and elevation of a cylinder 4 inches long,  $1\frac{1}{2}$  inches diameter of end, resting on the horizontal plane with its axis making angles of  $30^\circ$  with each plane of projection.



2. Draw the plan and elevation of a pyramid having three faces and base, all equilateral triangles of 2 inch sides, when one edge of the base rests in the horizontal plane and the axis of the pyramid is at  $30^\circ$  to the vertical plane and  $45^\circ$  to the horizontal plane of projection.

3. A cone of 3 inches height and 2 inches diameter of base is cut by a plane which makes an angle of  $60^\circ$  with the axis of the cone at a point 1 inch above the base. Draw the shape of the true cutting section and develop the cone, marking on it the line of section.

4. A cylinder, 2 inches diameter and 4 inches long, stands on the horizontal plane, and is penetrated by another cylinder  $1\frac{1}{2}$  inches diameter and 5 inches long, their axes bisect each other at  $60^\circ$  and both are parallel to the vertical plane. Draw plan and elevation, showing lines of penetration.

5. Develop both cylinders showing lines of penetration.

6. A cone 4 inches high, 3 inches diameter of base, stands on the horizontal plane, and is penetrated by a square prism 1 inch side of end and 5 inches long. Their axes bisect each other at  $90^\circ$ . The plan of the prism is at  $45^\circ$  to the vertical, and a diagonal of each end of the prism is vertical. Draw plan and elevation, showing lines of penetration.

7. Develop both solids in question 6 marking on the developments the lines of penetration.

8. There is a solid formed of two equal square pyramids of 2 inches base and 3 inches altitude, which are united by their bases. Draw the plan and elevation when the object rests on an edge of one of the pyramids, the axis being at  $45^\circ$  to the vertical plane and one diagonal of their common base, horizontal.

9. Construct the necessary scale, and project isometrically an *elliptical* cylinder 4 inches long. Ellipse 2 inches major and  $1\frac{1}{2}$  inches minor axis.

10. Construct isometrical scale, and project isometrically ( $\frac{1}{4}$  scale) a box 1 foot square (outside) made of boards 1 inch thick, bottom 1 inch thick, cover of same thickness, opened to an actual angle of  $45^\circ$  with box.

SECOND YEAR.

DESCRIPTIVE GEOMETRY.

THURSDAY, APRIL 9TH:—9 TO 12 A.M.

Examiners, ..... { C. H. McLEOD, MA.E.  
C. B. SMITH, MA.E.

1. Find the traces of a plane which makes an angle of  $45^\circ$  with the horizontal and  $60^\circ$  with the vertical, and draw a line in this plane making an angle of  $30^\circ$  with the horizontal.

2. Given a plane the traces of which make angles of  $30^\circ$  with  $x y$ , find a point distant 2 in. from the planes of projection and 1 in. from the given plane.

3. Draw the plan of an equilateral triangle of 2 in. side when its vertices are 1.0 in., 1.5 in., and 2.25 in. respectively above the horizontal plane of projection. (a) Find the projections of the circle containing the triangle.

4. The height of a regular hexagonal pyramid is 2 in. and the side of its base 0.6 in. Draw its plan when the base is inclined at  $60^\circ$  and one of the triangular faces at  $70^\circ$  to the horizontal plane.

5. The axis of a right circular cylinder of 2 in. diameter is inclined at  $60^\circ$  to the horizontal, and is penetrated by a sphere of 3 ins. diameter. The centre of the sphere is one-half inch distant from the axis of the cylinder. Find a horizontal and vertical projection of the line of penetration.

6. A cylinder of 2 in. diameter is surmounted by a rectangular block of 2.5 in. side by 0.5 in. depth. The horizontal edges of the block make angles of  $45^\circ$  with the vertical. Find the shadow on the horizontal and on the cylinder caused by rays, the projections of which make angles of  $60^\circ$  with  $x y$ .

7. The axes of projection make angles of  $105^\circ$  and  $135^\circ$ . Find the axometric projection of a mortice and tenon joint in 3 in. x 3 in. scantling. The tenon measuring 3 in. x 2 in. x 1 in. See sketch.

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## THIRD YEAR.

## DESCRIPTIVE GEOMETRY.

SATURDAY, APRIL 11TH:— 9 TO 12 A.M.

*Examiner*,..... { C. H. McLEOD, M.A.E.  
J. G. G. KERRY, M.A.E.

1. In a perspective drawing, the horizon is 3" above the ground line, and the point of sight is 8" distant from the picture plane. The point A is 2" perpendicularly behind the picture plane and the point B 1" behind it. In the perspective, A appears  $\frac{1}{2}$ " to the left of the centre of picture and  $2\frac{1}{2}$ " above the ground line, and B appears  $1\frac{1}{2}$ " to the right and  $\frac{3}{4}$ " above, respectively. Find how far A and B are really above the ground plane, and also the angle that the horizontal projection of the line A B makes with the picture plane.

2. A solid lying on the ground plane is composed of 3 arms, 1" x 1" in section, making angles of  $120^\circ$  with each other. The axes of the arms are  $2\frac{1}{2}$ " long. The solid is placed so that one of its corners is 3" to the left of the centre of the picture and  $\frac{1}{2}$ " behind the picture plane, and one axis makes an angle of  $60^\circ$  with the picture plane. Draw the perspective of this object, using the same horizon and point of sight as in question 1.

3. Describe the construction of maps by the Simple Conic, Bonne, and Polyconic Methods, specifying how the numbers used are obtained. Mention their several merits and demerits.

4. Distinguish between orthographic, stereographic and globular projection. Into what forms do the circles of the sphere project in each?

5. Calculate the numbers necessary for projecting every  $5^\circ$  of latitude between  $30^\circ$  and  $50^\circ$  and every  $5^\circ$  of longitude (1) by L'Orgna's projection, (2) by Mercator's projection. Take the radius of the sphere as 4000 miles.

6. Take the height of the horizon as 3" and the distance of the eye from the picture plane as 8" and let the projections of the shadow ray make angles of  $45^\circ$  and  $60^\circ$  with the picture plane and the ground plane respectively. Draw the perspective and the perspective of the shadow on the ground plane of a cube of 2" side. The base of the cube is horizontal and 1" above the ground plane; the sides of the cube make angles of  $45^\circ$  with the picture plane; and one corner of the cube is 2" to the left of the centre of the picture and  $\frac{1}{2}$ " behind the picture plane.

7. The base of a pyramid is an equilateral triangle of 2" side and its height is 3". It is placed with one edge of the base parallel to the vertical plane and 4" distant from it. Draw a perpendicular from the right end of

the parallel side of the base to the vertical plane, and on the centre of this perpendicular place the extreme left corner of the plan of a rectangular block  $1\frac{3}{4}'' \times 1\frac{3}{4}'' \times 3''$  high, one of whose sides makes an angle of  $60^\circ$  with the vertical plane. Draw the combined shadow of the two objects upon the horizontal plane and the vertical projection of the shadow cast by the pyramid upon the block, when the projections of the shadow ray make angles  $30^\circ$  and  $45^\circ$  with the horizontal and vertical planes respectively.

### THIRD YEAR.

#### ELECTRICAL ENGINEERING.

MONDAY, APRIL 13TH:—MORNING, 9 TO 12.

*Examiner*,..... C. A. CARUS-WILSON, M.A., M.INST.E.E.

1. An ammeter of 0.006 ohms resistance is placed in a circuit carrying 8 amperes. Find the resistance with which the ammeter must be shunted so that the current through it shall not exceed 5 amperes.
2. A potentiometer of 18 ohms resistance is placed on a 100 volt circuit and the P.P. terminals connected to points one-sixth of the whole length from each end. Find the current in a resistance of 8 ohms connected to the P.P. terminals.
3. A Siemens dynamometer gives a deflection of 220 degrees with 28 amperes in the thick coil and 180 degrees with 4 amperes in the thin coil. Find the deflection when 6 amperes is passing through both coils in opposite directions.
4. A coil of 45 turns and 1.4 cm mean diameter is placed at the centre of a second coil of 142 turns and 5.4 cm mean diameter. The smaller coil is connected to a galvanometer whose constant is 57.2 equivalent lines per degree. Find the deflection when 3 amperes is reversed in the large coil.
5. A calibrating coil of 2600 turns is 42 cm long and 2.3 cm mean diameter. The search coil on it has 70 turns. The deflection for 0.7 amperes reversed in the main coil is 360 degrees. Find the equivalent lines per degree of deflection.
6. Find how many turns must be wound on the swinging coil of a voltmeter 2 cm square if the couple required to give the full deflection at 150 volts is 0.04 gramme cms.  $H$  is 2000.  $R$  is 14,000.

7. A ring 6" inside diameter made of iron  $\frac{1}{2}$ " diameter has an air gap of 0.125 inch. Find the ampere turns required to give 6450 lines in the gap, if there is no leakage. §

8. A ring 5" mean diameter made of iron  $\frac{3}{4}$ " diameter is split across a diameter and wound with 60 turns. Find the current required to give a force of 100 pounds between the two halves. §

9. A wrought iron rod 1.4 sq. cm section and 35 cm long is tested in a magnetic yoke wound with 400 turns. N is found to be 18,900. for 1.35 amperes. If the permeability of the iron is known to be 771 for this induction, find the permeance of the return path of the yoke

§ Curve of B and H supplied.

#### FOURTH YEAR.

#### ELECTRICAL ENGINEERING.

MONDAY, APRIL 13TH :—MORNING, 9 TO 12.

*Examiner*,..... C. A. CARUS-WILSON, M.A., M. INST. E.E.

1. An ammeter with 150 divisions of 0.1 amperes each, readable to 0.2 of a division, is used with a voltmeter with 200 divisions of 0.0001 volts each, readable to 0.5 of a division to measure a resistance. The readings taken are 7.72 amperes and 0.00235 volts. Find the maximum error.

2. The shunt resistance of a 1500 Wattmeter is 4000 ohms. How could you make it read amperes, and what would be the maximum reading?

3. When an alternating current of 4.1 amperes and 90 periods per second is passed through a calibrating coil, a voltmeter connected to the ends of the search coil indicates 42 volts. Find the equivalent lines for a reversal of a continuous current of one ampere.

4. The power in a non-inductive circuit is given by a wattmeter at 44.6 watts. The wattmeter shunt resistance is then doubled, when the watts appears to be 50. Find the true watts.

5. Given 1400 yards of No. 10 B. & S. wire 36" apart serving transformers with an average load factor of 0.85. If the current is 5 amperes, the volts on the load 1000, the periods per second 130, find the drop in the line.



6. Find the diameter in cms of a single ring of No. 18 B. & S. wire that shall have a self induction of 0.001 milhenry.

7. Given a transformer in which the volume of the iron is 2400 cub. cms ; the hysteresis loss 2700 ergs per cycle per cub. cm ; the primary resistance 14 ohms ; secondary resistance 0.18 ohms ; the power factor on open secondary at 100 periods per second 0.7. Find the total lost watts for 15 amperes in the secondary.

## FOURTH YEAR.

## ELECTRICAL ENGINEERING.

SATURDAY, APRIL 18th :—MORNING, 9 TO 1.

*Examiner*,.....C. A. CARUS-WILSON, M.A., M. INST. E.E.

Given the speed curve of a motor on an ampere base as deduced from experiments, and the mechanical torque observed on a brake, also on an ampere base, to draw the curve of torque available for acceleration on a speed base and the torque losses on a mechanical horse power base.

When uniform speed has been attained the car runs at the rate of 14 miles an hour. The ratio of gearing is 4.78 and 33" wheels.

Line Volts, 500. Resistance of armature and fields 1.245 ohms.

The horse power scale to be the same as the ampere scale.

All intermediate steps to be shown graphically.

## FOURTH YEAR.

## ELECTRICAL ENGINEERING.

FRIDAY, APRIL 10th :—MORNING, 9 TO 12.

*Examiner*,.....C. A. CARUS-WILSON, M.A., M. INST. E.E.

1. A generator is compounded to give 100 volts at 1400 r.p.m. at all loads up to 80 amperes. Series ampere-turns for heat drop 960, for reaction 1600 ;  $R$  0.0375. Find the speed when run as a motor at 80 amperes with and without the series turns.  $E = 100$ .

2. A four pole railway generator giving 600 amperes at 550 volts at 400 r.p.m. has 220 commutator segments, polar area 25.5 inches by 22.5 parallel to the shaft. Armature drum wound and parallel connected, one turn per coil. Find the maximum pull in pounds on one conductor, and show where it occurs.

3. Two shunt motors are mechanically coupled and connected in parallel on a 500 volt line. If their induction factors are 70 and 71, find the total mechanical horse-power when one of the motors is doing all the work.  $R = 0.04$ .

4. A car weighing 30,000 pounds is driven by two geared motors designed to run in parallel at 15 miles an hour on a level when the frictional  $T$  is 600 pounds per motor. Find the steepest grade, per cent., the car will ascend when the motors are put in series, friction remaining the same.  $E$  is 500,  $v$  is 4.78,  $d$  is 33'',  $R$  is 1.5.

5. A car weighing 20,000 pounds is driven by two geared motors at 13 miles an hour on a level when frictional  $T$  is 800 pounds per motor. On ascending a grade of one in ten the motors are connected first in parallel then in series. Find the speed in miles an hour in each case if the friction remains the same as before. Given that  $E$  is 500,  $d$  is 33'',  $R$  is 1.3,  $v$  is 4.78.

6. A motor running on a 500 volt line, with a torque of 63,500 inch pounds, is coupled direct to a fly-wheel weighing 1.6 tons, radius of gyration 8 feet. If the line volts drops ten per cent., find in how many seconds the speed will have dropped the same per cent. Given that  $m$  is 75, and  $R$  is 0.02.

7. A crane has to lift 5 tons through a distance of 20 feet from rest in 12 seconds; chain drum 36" diam; gear ratio 9; frictional torque on motor 705 inch pounds. Maximum permissible current 80 amperes; line volts 500; the motor is to be switched on without any rheostat and left to run. Find the induction factor of the motor.

8. A turret weighing 20 tons with a radius of gyration of 7 ft. 6 in. is rotated by a motor with a gear ratio of 300, having an induction factor 8 and a resistance 0.2 ohms. The frictional running torque on the motor is 338 inch pounds, the line volts 80. Find the shortest time in which the turret can be rotated through 240 degrees, using a starting rheostat, the current not to exceed 40 amperes.

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## B. A. SC. EXAMINATION.

## MECHANICAL-ENGINEERING LABORATORY WORK.

SATURDAY, APRIL 11TH :— MORNING, 9 TO 12.

*Examiners*,..... { J. T. NICOLSON, B.Sc.  
                              { J. J. GUEST, B. A.

(Not more than six)

1. Describe an experiment for studying the laws of belt friction, noting the precautions to be taken to secure uniform results. Suggest a method of arranging the experiment so as to determine the relation between the co-efficient of friction and the normal pressure as directly as possible.
2. The experimental engine uses 1000 lbs. of steam per hour as measured at the hot well, 10 lbs. per hour are trapped at the main separator. Two per cent of the remainder passes as a sample first, through a separating vessel, where  $\frac{1}{2}$  lb. collects per hour, and then through a throttling calorimeter. If the temperature and pressure in the latter are 308° F and 20 lbs. absolute respectively; find the dryness of the steam supplied by the boiler, its pressure being 205 lbs. absolute.
3. How would you proceed with a Froude-Reynolds brake to slow up the engine from one constant speed to another? Explain what happens.
4. Draw a L. P. indicator card such as you got from the experimental engine. Show by dotted lines the effect on the card and on the atmospheric line of one thirty-second of an inch lost motion between spring and piston.
5. An engine indicating  $H$  horse power receives  $W_f$  lbs. of cylinder feed and  $W_j$  lbs of jacket steam (both dry) per minute. The heat rejected to the condensing water is  $Q$  and to the hot-well  $q$  thermal units per minute.  
With the engine standing under jacket steam alone  $w$  lbs. of steam are condensed per minute.  
Make out a balance sheet of the quantities of heat.
6. Show how to find a point on the temperature-entropy diagram corresponding to any point in the expansion curve of a given card.
7. How would you conduct a boiler trial, either natural or forced draft? Make out a heat balance sheet from assumed results.
8. How do you determine the water equivalent of *e. g.* a coal calorimeter? Estimate the effect on the result, of errors of given amount in each of the observed quantities.

## B.A.Sc. EXAMINATIONS.

## HONOURS AND MECHANICAL ENGINEERING.

## MACHINE DESIGN.

WEDNESDAY, APRIL 15TH :—AFTERNOON, 3 TO 5.

*Examiner*, ..... J. J. GUEST, B.A.

15. Sketch the H.P. cylinder of questions 2 and 6, showing a balanced valve.

16. A horizontal span of wire is 1000'. Find the length of wire which will give the minimum stress at the extremities, that stress and the sag.

17. Prove the formula for determining the stress produced by internal pressure in thick cylinders and apply it to find the necessary thickness for a steel hydraulic cylinder of  $10\frac{3}{4}$ " inside diameter and subjected to a pressure of 3,000 lbs. per sq. in.

18. Sketch a connecting rod big end suitable for a locomotive.

19. A pair of wire ropes 3" in circumference and weighing 1.34 lbs. per lineal foot are used to raise loads of 4,000 lbs. (which includes the cage) from a mine 750' deep. One cage ascends while the other descends, and the ropes are wound on to drums on the same shaft. Design the drums so as to give a constant torque of 12,000 foot pounds on the shaft.

20. A helical spring is made of circular steel rod .56" diam. The overall diameter of spring is 3" and the pitch is .963". The total length of spring is 8.8". Find the dead weight which will compress it 1", and the natural period of oscillation of the spring so loaded. What is the maximum load the spring will stand?

21. It is required to adjust the main valve of a Meyer expansion gear so that the lead is  $\frac{5}{8}$ " and the compression takes place at  $165^\circ$ . The outside lap is  $\frac{11}{32}$ " and the inside  $\frac{5}{32}$ ". The travel and angular advance can be varied; find their amounts.

## B.A. SC. EXAMINATION.

## MACHINE DESIGN.

WEDNESDAY, APRIL 15TH, 1896 :—9 TO 12 A.M.

Examiners, ..... } J. T. NICOLSON, B.Sc.  
 ..... } J. J. GUEST, B.A.

(Not more than ten.)

1. A machine is capable of punching an  $1\frac{1}{2}$ " hole in an  $1\frac{1}{2}$ " steel plate 36" from the edge; the dangerous section at the bottom of the jaw is a hollow rectangle 28" wide by 50" deep external measurements. What should the thickness be so that the stress will not exceed 2,500 lbs. per sq. inch?

*Data for 2 to 6.*—A compound vertical marine engine, cylinders  $12\frac{3}{4}$ " and  $20\frac{7}{8}$ " x 12" stroke using steam at 135 lbs. per sq. in. absolute, runs at 445 revs. per min. and indicates 465 H.P. The cylinders have liners, and the space between the liners and casting is used as a jacket. The connecting rod is  $28\frac{1}{2}$ " centres.

2. Find the diameter of the piston rods at the bottom of the thread.

3. Find the diameter of the connecting rod at each end.

4. Find the diameter of the connecting rod in the middle.

5. The motion bar is a flat plate of cast steel, 5" wide and 20" centre to centre of supports. Find its thickness.

6. Find the diameter of the after crank pin, material steel ( $f_s = 9,000$ ). Centres of main bearings 22".

*Data for 7 to 12.*—An Agir Street Railway motor of 12 H.P. gears down 1:3 by three pinions and spur wheels abreast. The first motion shaft is  $6\frac{5}{8}$ " vertically below the motor shaft which runs at 750 revs. per min. The bearings are 2'.  $9\frac{1}{2}$ " centre to centre, armature to gear wheels centres 12", gear wheels to bearing centres  $5\frac{1}{2}$ ". Weight of armature 300 lbs.

7. Find the diam. of the shaft between armature and pinions.

8. Find the length and diam. of journal nearest the pinions.

9. Design the key in the spur wheels.

10. The armature has 288 conductors of circular copper wire  $\frac{1}{8}$ " diam.



(weighing .32 lbs. per cubic in.). If the binding wires are 0.003" diam. (safe stress 15,000 lbs.  $\square$ "), find their pitch and the number required in each set.

11. Given that the breadth of a tooth = 2.5 times the pitch. Find the pitch.

12. Draw an involute tooth for the pinion, the obliquity of the path of contact being  $15^\circ$ .

13. The wheels of a truck are 33" diam. and the journals  $5\frac{1}{2}$ ". The coefficient of journal friction is 0.01; what is the tractive effort per ton?

14. Given that the connecting rod = 4 cranks and that the travel of the valve is 4". Find the laps and angular advance to give cut off at 0.4. Release at 0.95 and compression at 0.85 of the stroke as nearly as possible. State the leads.

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#### B.A. SC. EXAMINATION.

##### *Dynamics of Machinery.*

WEDNESDAY, APRIL 8TH:—MORNING, 9 TO 12.

*Examiner*, ..... J. T. NICOLSON, B.Sc.

*(Not more than 10 to be attempted).*

1. A locomotive coupling-rod on a four coupled engine is equivalent to a bar of wrought iron seven feet long and 6" by 2" section. The stroke is 26 inches. Find the balance weight required on each wheel for this if its centre of mass be situated 20" from the wheel centre.

2. The new Otto-Crossley gas engines have two cylinders opposite each other with pistons working on the same crankpin. Find an expression for the unbalanced force on the frame due to inertia of the reciprocating parts. If these weigh 150 lbs. for each cylinder and the stroke be 18". Find the value of the force at the end of the stroke when the revolutions are 170.

3. Sketch the link work of an Atkinson Cycle gas engine, and show how to find the crank effort.

4. In order to study the changes of angular velocity of an engine shaft during one revolution, a mass with a piece of chalk on it is held by two stretched spiral springs opposite the edge of the fly wheel rim, so that by displacing the mass a harmonic curve is traced round the wheel. The mass

is 5 lbs., how stiff must the springs be so that a complete oscillation may be performed on the average in a foot of rim at 300 revolutions? (5 ft. wheel).

5. Make a careful sketch of a slide valve with Meyer expansion plates.

6. In a governor explain: controlling force, stability, sensibility, approximate isochronism, power.

7. Show how to find the controlling force in a Proell governor.

8. Sketch and describe Davey's differential valve gear.

9. Find the velocity with which a 14 lb. hammer strikes a block of wood 15 feet long and 1 foot square (weighing 32 lbs. per cubic foot) hanging from a spindle fixed to one end, if the block swings out through an angle of  $10^\circ$ .

The hammer strikes horizontally 8 feet below the axle, and is just reduced to rest.

10. What would be the forces on the axle in last question?

11. Define centre of percussion, and find its position in a long rod.

12. The lower pulley of a band saw in a saw mill is struck on the edge of its rim by a log in a horizontal diameter. Apart from disaster, how will the wheel behave?

If the blow lasts 0.01 second and its mean intensity be 40 lbs.; evaluate the effect on a wheel 5 feet dia running 300 revolutions, the rim being 6" wide by 1" thick.

13. In a Napier "Show-speed" tachometer the glass tube is  $\frac{1}{4}$ " diameter and is 12" high. It has one inch of mercury in it. At what speed of rotation will the mercury rise to the top?

### HONOURS.

#### AFTERNOON, 3 TO 5.

14. Show how to apply either Zeuner's or the harmonic valve diagram to examine either the gear of question (5) or the Stephenson link motion.

15. Find by analysis the force required for the acceleration of the connecting rod of a direct acting engine.

16. Find the additional centrifugal force referred to the centre of the 3" ball of a Watt governor when the centrifugal couple due to the ball-arm is taken into account. The arm may be taken as a round rod 1" dia. and 10" long. Speed 250.

17. In a pumping engine where the mass of the reciprocating parts is relied upon to equalize the speed; you are given the effective piston and

plunger pressures (which include friction) and the masses. Show how to draw a curve of piston speed.

18. Discuss the question of knocking in steam engines. Show how it may be impossible to prevent an engine with a certain proportion of clearance from knocking.

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B.A.Sc. EXAMINATION.

THERMODYNAMICS.

FRIDAY, APRIL 17TH :—MORNING, 9 TO 1.

*Examiner*.....J. T. NICOLSON, B.Sc.

(*Not more than ten in all.*)

1. State Boyle's and Charles' laws of the permanent gases.

Show that the volume in cubic feet of a lb. of air at atmospheric pressure (density 0.0807 at 32° F and 14.7 abs.) is  $\frac{\tau}{40}$  very nearly.

2. State Regnault's & Joule's laws of the same.

Show that  $K_v (\tau_2 - \tau_1)$  measures the change of internal energy of a pound of gas whose temperature falls from  $\tau_1$  to  $\tau_2$  in any manner whatsoever.

3. Air expands from states  $P_1 V_1$  to  $P_2 V_2$  according to the law  $PV^n = \text{constant}$ . Find an expression for the work done.

4. Describe the cycle of an Ericsson air engine; and deduce the efficiency.

5. What do you understand by an engine which is reversible in the thermodynamic sense.

6. A steam engine which is reversible, except in regard to adiabatic compression, receives steam (dry) at 205 lbs absolute and expands adiabatically ( $PV^{1.135} = \text{const.}$ ) down to 10 lbs. absolute.

It exhausts at 10 lbs, and the temperature of the feed is 193.2° F. Find the work done per pound of steam; the efficiency, and the steam used per 1 H P hour.

7. Describe Joule's Air Engine, and draw its temperature entropy diagram.

8. Discuss the advantages of Lord Kelvin's proposal to use a reversed heat-engine as a warming machine.

9. Write a concise account of the actual behaviour of steam in the cylinder of a steam engine.

10. Describe the cycle of an Otto gas engine, and draw a diagram.

(*Mechanical Engineering and Honours students not less than three.*)

1. Find an expression for the dryness of steam at any point of an adiabatic expansion curve.

A pound of a mixture half steam and half water at 215 lbs. absolute expands to a pressure of 10 lbs. absolute. Find the dryness fraction.

2. Give Elliott's proof that drop makes steam wetter.

3. A steam engine receives dry steam at 205 lbs. absolute, and discharges it at 10 lbs. absolute. Find the "Willans" efficiency.

What change would be made in this theoretical efficiency if the steam had been supplied superheated 36 degrees?

4. Find the amount of heat which must be supplied to steam to keep it dry and saturated when expanding from 203 lbs. to 79.3 lbs absolute.

5. Describe and explain the phenomenon of "after-burning."

6. The piston displacement and clearance volume of a Sirling air engine are 1 cu. ft. and 4 cu. ft. respectively. The temperatures of the two isothermals are 650° F and 150° F and the initial pressure is 240 lbs. absolute. Find the I H P of the engine, which is double-acting and makes 120 revolutions per minute.

STEAM TABLE.

| p    | t     | h     | H      | L     | $\rho$ | $\frac{pu}{J}$ | v      |
|------|-------|-------|--------|-------|--------|----------------|--------|
| 308  | 419.8 | 394.4 | 1210.0 | 815.6 | 730.2  | 85.4           | 1.515  |
| 215  | 387.9 | 361.0 | 1200.2 | 839.2 | 754.6  | 84.6           | 2.142  |
| 205  | 383.8 | 356.8 | 1199.0 | 842.2 | 757.8  | 84.4           | 2.241  |
| 79.3 | 311.2 | 280.8 | 1176.8 | 896.1 | 816.3  | 80.0           | 5.470  |
| 10   | 193.2 | 161.9 | 1140.9 | 979.0 | 903.4  | 70.6           | 38.160 |

## B.A. Sc. EXAMINATION.

## MECHANICAL ENGINEERING.

TUESDAY, APRIL 7TH :—MORNING, 9 TO 1.

*Examiner*,.....J. T. NICOLSON, B.Sc.

*(Not more than 10 to be attempted. The last three questions are for Honours candidates).*

1. Determine the diameter and length of a Cornish boiler of 120 horse power.

2. Find the sizes of cylinders for a compound engine to indicate 80 horse power at 120 revolutions. Initial and back pressures 155 and 3 lbs. absolute; ratio of expansion 12, of cylinders 4; diagram factor 0.75. Equal powers are to be developed in each cylinder. Stroke 15".

3. Sketch a method of jointing and attaching a liner to a steam cylinder.

4. Discuss a rule for determining the port area of a steam cylinder. Find the sizes of port suitable for a 48" L. P. cylinder, whose piston has a 39" stroke, and makes 95 revolutions a minute.

5. What amount of condensing water at 60° F must be supplied per pound of steam exhausted from an engine at 8 lbs. absolute pressure: (a) with surface condenser, when the temperature of the discharged circulating water is 100° F., and that of the air pump discharge 120° F (b) With a jet condenser, when the air pump discharge temperature is 120° F.?

6. Determine the size of air pump (vertical single-acting) required for a jet condenser working under the conditions of last question; if the engine exhausts 20 pounds of steam per minute. Take the stroke 6 inches and the revolutions 100 per minute.

7. Find the area of the foot and head valves of the air pump of question (6), and mention any conditions that should be attended to in arranging their positions.

8. Draw to scale (on the squared paper provided), a double ported slide valve for steam ports 2 inches wide. Outside laps  $\frac{3}{4}$ "; inside lap  $\frac{1}{4}$ " positive at one end, negative at the other. Write down the travel.

*Or:*

Make a centre-line diagram to scale of a Joy's or Marshall's valve gear, and show how to determine the laps.

9. Deduce the equation to the curve of available head, in excess of what is necessary to keep the suction column of a single acting water pump unbroken, throughout the stroke.



10. Draw the indicator cards you would expect to get from a water-pump chamber

- (a) When the suction valves close too late ;
- (b) When the suction valves leak ;
- (c) When air is drawn in and discharged every stroke.

11. It is known that, with a boiler suitable for forced draft, the water evaporated per pound of coal is 30 divided by the cube root of the coal burnt per square foot of grate per hour. Such a boiler costs \$100 per square foot of grate surface. You may take 30 lbs. of steam as equivalent to one horse-power-hour ; the cost of coal \$4 per ton ; the working year of the boiler 500 hours (*i.e.*, two days per week during the College session) ; and the rate of interest and depreciation on the value of the boiler at together 10 per cent. per annum.

It is required to find the most economical rate of stoking ; and the cost of boiler and coal per horse-power-hour when firing at that rate.

12. When air initially at rest under a pressure greater than twice that of the atmosphere flows adiabatically out of its containing vessel, show that the kinetic energy acquired per pound equals the product of the fall of temperature and the specific heat at constant pressure.

13. Determine the diameters of the steam and water orifices of a non-lifting injector to deliver one pound of water per second against a pressure of 215 lbs. absolute. The temperatures of the suction water and feed are 80°F. and 200°F. respectively. The steam supplied to the injector contains 5 per cent. of water ; the pressure in the steam orifice is 129 lbs. absolute ; and the supply head is nothing.

### THIRD YEAR.

### DYNAMICS OF MACHINERY.

WEDNESDAY, APRIL 15TH :—MORNING, 9 TO 12.

*Examiner*,..... J. T. NICOLSON, B.Sc.

(*Not more than ten*).

1. Two engines haul a freight train up a  $4\frac{1}{2}$  p.c. grade at a speed of 6.9 miles per hour. The total weight of train is 1,075,000 lbs., and the locomotives indicate together 1272 horse-power.

Find the train resistance in lbs. per ton.

2. If the hindmost engine coupling breaks, how far will the cars run up ; and how fast will the engines be running when they come to a stand still, assuming the resistances to be as found in question (1). Weight of locomotives together 580,000 lbs.

3. In Douglas Galton's experiments, how did the coefficient of friction vary (1) with velocity, (2) with time, (3) with intensity of pressure on brake blocks?

4. Explain why a train will stop more quickly if the wheels are not skidded.

5. The coefficient of friction (or adhesion) between a cartwheel rim and the ground varies so as to be always numerically equal to one-third of the load in tons. The coefficient of axle friction (constant) is 0.1.

Find the load at which the wheel will begin to skid.

6. Investigate the equilibrium conditions of a band brake of any type find the horse power it will absorb in terms of the force on the handle.

7. Find expressions for journal friction on three hypotheses of distribution of pressure, and compare the friction losses.

8. Find the area of section of rim of a fly-wheel for a punching machine which will allow a 20 per cent. variation of speed; if the rim diameter is 30 inches, the speed 60 revs. per minute, the energy per cycle 70 inch tons, the coefficient of fluctuation of energy is 0.28.

9. Show that the frictional resistance of toothed wheels is greater in the arc of approach than in the arc of recess, the angular distances on each side of the line of centres at which it is measured being the same.

10. State concisely what you know about rolling resistance and rolling friction.

11. Show the advantage of friction wheels in reducing lost work; and what the best proportions are.

12. The taper of a cotter is 1 in 7; what must be the coefficient of friction so that it will just slack back?

13. Find the pitch of screw of maximum efficiency.

### THIRD YEAR.

#### MACHINE DESIGN.

TUESDAY, APRIL 7TH:—MORNING, 9 to 12.

(*Not more than twelve to be attempted*).

Examiners, ..... { J. T. NICOLSON, B.Sc.  
W. ARCH. DUFF, B.A.Sc.

1. Define stress, strain, elastic limit, yield point, permanent set, ultimate strength, and factor of safety.

Draw stress-strain diagrams for bars of wrought iron and cast iron in tension and compression.

2. In which position is a square beam stronger : with the plane of bending parallel to a diagonal or parallel to one side ?

Prove your result.

3. Deduce a formula for the resistance of thin cylinders to an internal bursting pressure.

What thickness would you make the steel plates of a boiler 8 feet in diameter, working pressure 125 lbs ?

Efficiency of joint may be taken as 70% ; tenacity of plates 50,000 lbs ; factor of safety 5.

4. Sketch and dimension a double rivetted, double butt strap joint with zig-zag rivetting, for the boiler of the last question, taking  $f_t = 10,000$  lbs.  $f_s = 8000$  lbs. and ratio of double to single shear strength of rivets 1.5.

5. How many bolts would you use to fasten the cylinder cover of an engine working at 105 lbs boiler pressure and what should be their diam. ?

Diameter of cylinder 14 inches ; diameter of bolt circle 17 inches,  $f = 4000$  lbs.

6. Make a careful sketch of a foundation bolt and washer, secured by a cotter with gibbed ends.

Give suitable dimensions to withstand a pull on the bolt of 30,000 lbs.  
 $f_t = 10,000$  lbs.  $f_s = 8,000$  lbs.  $f_c = 20,000$  lbs.

7. Describe concisely Beauchamp Tower's experiments on journal friction, and state the conclusions that may be drawn from them.

8. Find the diameter of the overhung crank pin of a steam engine having a cylinder 28" in diameter, initial pressure 100 lbs. Take the bearing pressure at 800 lbs. per sq. in. of projected bearing area, and the safe tensile stress at 9000 lbs.

9. The gun metal brake handle of an electric car has a radius of  $9\frac{1}{2}$  inches ; the vertical height of the handle above the bearing is 12 inches ; the overhang of the handle is 5 inches. If a motorman can apply a maximum force of 200 lbs. on the handle, find the diameter at the dangerous section if the material have an allowable shearing stress of 3500 lbs.

10. Sketch carefully Seller's double cone vise coupling.

11. In a freight car axle the distance between centres of the axle boxes is  $6' 4\frac{3}{4}"$ . The rails are  $4' 10\frac{1}{2}"$  centres. Find the diameter of the axle at the wheels and in the centre, if the load be 9000 lbs. and the safe stress 9000 lbs per sq. in.

12. In a coupling for permanently uniting two  $4\frac{1}{2}$ " diameter shaft ends, consisting of two cast iron clips in halves, 10" outside diameter, and 20" long, with two wrought iron shrunk rings pressing the clips against the shafts, each  $1\frac{1}{4}$ " thick and 4" wide; find the radial pressure which a tensile stress of 10,000 lbs in the rings will produce between clips and shafts. If the shafting runs at 120 revolutions, find the horse power at which the clips will begin to slip, the coefficient of friction being 0.25.

13. In the last question find the maximum horse power the shaft itself can safely transmit, with an allowable shearing stress of 8000 lbs.

14. Vertical cast iron pillars 20 feet high, 8" outside diameter, and half an inch thick, spaced 110 feet apart are used to support Electric Railway trolley wires.

These wires  $\frac{3}{8}$ " diameter are two in number of copper, whose weight per cubic inch is 0.32 lbs.

The poles are 40 feet centre to centre, and the wires are 8 feet centre to centre, across the street.

The sag of the supporting cross wire is 12 inches. Find the stress in the metal at the foot of the pole.

## SECOND YEAR.

### KINEMATICS.

SATURDAY, APRIL 11TH:—MORNING, 9 TO 12.

*Examiner*,..... J. J. GUEST, B.A.

*(Not more than twelve, of which three must be from the last six.)*

1. The countershaft of a wood planer has an  $8\frac{1}{4}$  driven pulley on it, and is to run at 800 revs. per min. It is driven from the main shaft which is 6' 6" distant, and makes 220 revs. per min. What diameter should the main shaft pulley be, and what length of belt would you require?

2. What are the advantages of a friction feed for machine tools? Give a sketch of one type. How is it that a sufficient force to feed the drill can be transmitted by the friction?

3. Describe the pantograph, and prove that it copies proportionally.

4. Explain, giving a sectional sketch, a method of driving and feeding used in drilling machines.

5. Why are two or more pawls sometimes used on ratchet wheels? Describe their action and arrangement.

6. Sketch a quick return motion used on shaping machines. How would you determine the ratios of the average speeds of the return and cutting strokes?

7. The leading screw of a lathe has 6 threads per inch, and the change wheels are 24, 30, 36, 48, 54, 60, 72, 78, 96. Find the wheels to cut a thread of 26 turns per inch.

8. Find the formula used in discussing epicyclic trains, and apply it to find the motion of the final wheel in a reverted epicyclic train where the fixed wheel has 30, the secondary wheels 32 and 31, and the final wheel 31 teeth, and the teeth are all of the same pitch.

9. What is the kinematical object aimed at in the design of wheel teeth, and what is the geometrical condition which secures it? Define envelope, epicycloid, involute, pitch circle and root circle.

10. Define amplitude, phase and periodic time as applied to harmonic motion. Find an algebraic expression for the position of a point moving harmonically, and from it deduce the velocity and acceleration.

11. Sketch the beam of an engine fitted with Watts parallel motion, and show the points of attachment of the various rods. Shortly explain the principles of the mechanism.

12. Describe, with sketches, the action of the chronometer or cylinder escapement.

13. What is meant by the outside lap, the lead, the angular advance and travel of a slide valve. How would the steam distribution be affected by slightly decreasing the outside lap?

14. Define turning pair, link, closed kinematic chain, mechanism; what is meant by the number of degrees of freedom of a body?

15. How many degrees of freedom would the mechanism of the direct acting steam engine have if the connecting rod were broken? Sketch a body so restrained as to have two degrees of freedom.

16. How would you class kinematically: (1) a Whitworth shaper, (2) Oldham's coupling, (3) a balance, (4) Watts parallel motion, (5) a vise.

17. What is meant by the instantaneous centre of a moving link? Find it for the connecting rod of a direct acting engine, taking several positions of the crank.



18. Define Centrode and Axode. What do they become in the case of:  
(1) a pair of spur wheels, (2) a pair of bevel wheels, (3) a worm and wheel.

19. Show how to use the properties of the instantaneous centre to draw the velocity-time diagram of the piston in a uniformly running direct acting engine. How would you derive the acceleration from this diagram?

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## SECOND YEAR.

### DRAWING.

THURSDAY, 16TH APRIL :—MORNING, 9 TO 1.

*Examiner*, ..... W. A. DUFF, B.A.Sc.

Copy No. 1 and either No. 2 or No. 3 drawings in pencil and afterwards ink in.

Complete and correct the views, giving all necessary dimensions.

Scale to be  $3'' = 1' 0''$ .

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## THIRD YEAR.

### DRAWING.

THURSDAY, 16TH APRIL :—MORNING, 9 TO 1.

*Examiner*, ..... J. J. GUEST, B.A.

Finish the views in the order C, B, A, D. Leave C finished in pencil, the others may be inked in.

Supply all necessary dimensions and corrections.

Scale to be half full size.

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## B.A.Sc. EXAMINATION.

### METALLURGY.

WEDNESDAY, APRIL 1ST, 1896.

*Examiner* ..... J. E. HARDMAN, M.E., S.B.

1. Describe briefly how you would determine whether a gold ore was 'Free-Milling' of 'Refractory'; and outline the treatment you would give the ore in each case.

2. Given an ore of quartzose gangue containing \$6.00 per ton in free gold, and 3 p.c. of sulphurets, which sulphurets assay \$14 in gold and \$30 in silver; given the composition of these sulphurets as Pyrite 70 p.c., Galena 25 p.c., Chalcopyrite as 5 p.c. :—(a) state the process and plant you would adopt to treat from 20 to 25 tons per day of this ore, and (b) give amounts and values you would expect to get in each stage of the treatment of a lot of 100 tons, making due allowance for the efficiency of each of the processes used and stating what efficiency you are figuring on.

3. (a) What are the three main methods of obtaining silver from its ores? (b) Give a short description of the "Washoe" process, and (c) of any of the lixiviation processes.

4. What methods are employed for the desilverization of base bullion? State very briefly the principles of each.

5. What is the net value to the miner of an ore assaying 100 oz. Ag, 1 oz. Au, 15 p.c. Pb, 50 p.c.  $\text{SiO}_2$ , 15 p.c. FeO, 10 p.c. CaO, 5 p.c.  $\text{H}_2\text{O}$ , when charges are :—Basis \$5.00 per ton, "fluxing" 10 cts. per unit, silver 95 p.c. of quotation (68 cts.), gold \$19, lead 90 p.c. @ 25 cts. per unit?

6. What kind of an atmosphere do you get in a blast furnace? How is this atmosphere produced? What available sources of O have you in a blast furnace besides the O in the blast?

7. How are blast furnace slags broadly classified? Define each.

8. Given a "bed" of silver lead ores assaying 100 ozs. to the ton, containing 20 p.c. Pb, 50 p.c.  $\text{SiO}_2$ , 15 p.c. FeO, 5 p.c. CaO, given an iron ore with 70 p.c. "available" FeO, and a limestone with 50 p.c. "available" CaO: Find (a) amounts of iron ore and of limestone necessary in a 1000 lbs. charge to form a slag having the formula 30  $\text{SiO}_2$ , 40 FeO, 20 CaO; (b) percentage of Pb. in the charge; (c) grade of bullion you should get.

Disregard moisture, As. Si. Cu. Zn. and Coke ash.

9. Give an outline of the modern American method of smelting sulphide copper ores in a shaft furnace, beginning with the raw ore and producing a 45 p.c. to 50 p.c. matte. State what points of difference occur to you between the smelting of copper ores and of lead ores in a blast furnace.

10. What is the theory or fundamental principle upon which "Pyritic Smelting" is based? Why is this process not suitable for ores comparatively high in Pb or Cu? To what ores is it best adapted? In what essential particulars does a furnace for pyritic smelting differ from the ordinary blast furnace for copper?

## THIRD YEAR.

## MINING.

WEDNESDAY, APRIL 1st, 1896.

*Examiner* ..... J. E. HARDMAN, M.E., S.B.*Answer any twenty of the following questions.*

1. What is meant by the "dip" and "strike" of an ore deposit, and how would you determine them in any given case?

2. Given a vein 2 feet thick, exposed in two places only by cross trenches 200 feet apart : how would you proceed to explore this vein and open it up to ascertain its *probable* extent and value?

3. Give terse definitions of the following terms:—

|          |         |            |                |
|----------|---------|------------|----------------|
| Shaft    | Level.  | Cross-cut. | Millpass.      |
| Incline. | Tunnel. | Upraise.   | Gallows-frame. |
| Winze.   | Adit.   | Stope.     | Sump.          |

4. How would you proceed to test a claim containing 1000 acres of placer gravel, and what main points would you be obliged to consider before deciding upon the profitable character, or otherwise, of the claim?

5. Sketch (Scale  $\frac{1}{4}$ " to the foot) two methods of framing the timber for a tunnel 7 feet high, 6 feet wide at the sill and four feet at the cap.

6. Supposing the preliminary work done under Question 2 showed a valuable deposit averaging 2 feet in thickness, with good vertical walls, state (assisted by sketches) how you would open up and equip the property for an output of 50 tons per day, the water amounting to 50,000 gallons each 24 hours.

7. What determines the method of stoping, *i. e.*, "overhand" or "underhand" in a given deposit? State fully and give the reasons.

8. If you had a large body of soft ore to stope out, and had had no experience with the same, what authorities would you consult and where would you go to get the information desired?

9. What devices are used for getting ore from the stopes in the mine to the surface? Give freehand sketches of those you mention.

10. What rule would you use for determining size of sheave for any given diameter of wire rope?

11. Sketch two forms of a "shackle" showing how the rope is fastened in the same; sketch also a "clevis" and two forms of hooks or spring clips for use with a bucket.

12. How would you care for a winding rope, and what precautions would you take to ensure it a long life and no severe strains ?

13. It is required to hoist from the 500 feet level through a vertical shaft 100 tons every 10 hours; the dead weight (*i. e.*, rope, cage, car, etc.) is 1,500 lbs. The time consumed in round trip in 3 minutes. What horse-power would you give your hoisting engine to perform this work satisfactorily ?

14. What two systems of ventilation are there ? Give an example of each.

15. Explain the difference between "long-wall" and "pillar and stall" methods of mining coal ; illustrate with sketches.

16. What method of borings are in use to-day ? For what purposes are borings used ?

17. What is the object of Ore Dressing ? Upon what quality of minerals does wet concentration depend ?

18. What is the difference between "sizing" and "sorting" ? What is meant by "equal falling" particles ?

19. Sketch an hydraulic classifier and explain its operation.

20. Sketch a piston jig and explain its operation.

21. What is meant by a "slieve" and a "trommel" ?

22. Sketch any one form of magnetic separator for iron ores and explain its operation.

23. What are the different ways of employing mining labor ? What are the fields for each method and the advantages and disadvantages ?

## B.A.Sc., EXAMINATION. CIVIL ENGINEERING COURSE.

### STRUCTURAL DESIGNING.

*Examiners*, ..... { HENRY T. BOVEY, M. INST. C. E.  
CECIL B. SMITH, M.A. E.

1. Wooden highway bridge 2-50 ft. spans, with masonry abutments and bill of material for trusses.

2. Iron highway bridge, 50 ft. through span.

3. Iron plate railway girder, 50 ft. through span.

4. Iron railway viaduct, towers with 30 ft. and 40 ft. deck plate girder spans.
5. Roof for building, 50 x 80 ft. slate covering, wooden trusses, bill of material.
6. Wooden railway trestle design for structure 250 ft. long, 50 ft. high, bill of material.
7. Semi-elliptical masonry arch, 100 ft. span, 28 ft. rise, roadway and sidewalks 40 ft. wide.
8. Impounding reservoir design, masonry overflow and wings, gate house, valves, etc.
9. Deck steel triangular railway truss, 100 ft. span.
10. Deck Worden railway Howe truss, 100 ft. span.
11. Water-tower tank, 70 feet high, 50 ft. diam., elevated on tower 80 feet high.
12. Through pin connected Pratt railway truss, 150 ft. span.

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#### CEMENT LABORATORY.

#### CEMENTS AND CEMENT TESTING.

#### THIRD YEAR CIVIL AND MINING ENGINEERING COURSES.

THURSDAY, APRIL 2ND, 9 TO 12.

*Examiner*, ..... CECIL B. SMITH, M.A. E.

#### (A) *Oral Examination.*

Why should cements be tested? Name the various tests to which a cement may be subjected, what tests are ordinarily made? Which is the most important test? Why? Describe the various tests in detail, illustrate by apparatus used.

#### (B) *Written Examination.*

1. Describe the cycle of operations, with chemical changes, from the time of burning a limestone rock until the lime mortar has finally attained its full strength and hardness.

2. Describe the manufacture of a natural cement, give average chemical proportions of magnesian and non-magnesian natural cements, point out the reasons why a natural cement is not apt to be as uniform in strength, or as strong, as a Portland.



3. Account for the fact that magnesian natural cements are safe, usable, and often quite high in strength ; while a large per cent. of magnesia in a Portland cement is unsafe.

4. Describe, in detail, the manufacture of a Portland cement as carried out at Napanee Mills or Owen Sound, from the condition of raw marl and clay to the marketable product.

5. What specific gravity and what residue on No. 100 sieve would you specify for a fresh high grade Portland ?

6. What are average percentages of the various leading constituents of a Portland cement ? Give De Chatelier's chemical limits for lime. Supposing lime were 68 p. c., what would you think of the cement ?

7. Name various means or causes by which cements become slower or quicker setting.

8. Why cannot concrete sidewalks be built without joints ?

9. If you were forced to lay masonry in extreme winter weather, state your method of procedure.

10. About what proportions of components are used for Portland and for natural cement concretes for foundations and for sidewalks ? Describe the mining and placing of concrete in air or under water.



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Faculty of Law.

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# FACULTY OF LAW.

## ROMAN LAW.

TUESDAY, 17TH DECEMBER, 1895, 3 P.M.

*Examiner,* ..... N. W. TRENHOLME, Q.C., DEAN.

1. Define Res, and give the classifications and divisions of Res in the Institutes.

2. Singulorum autem hominum multis modis res fiunt. Mention and classify these modes, with special notice of Occupatio and Accessio

3. Venditae vero res et traditae, non alitur emptori acquiruntur, quam si is venditori pretium solverit, vel alio modo ei satisfecerit, veluti ex promissore aut pignore dato: quod quanquam cavetur ex lege duodecim tabularum, tamen recte dicitur et jure gentium, id est, jure naturali, id effici; sed si is qui vendidit fidem emptoris sequutus fuerit, dicendum est statim rem emptoris fieri.

Give some account historically of the principles of this paragraph.

4. Give some account of Possessio, and the principal rights and remedies of the possessor in Roman Law and in our law.

5. Mention the principal Jura in Re.

6. Give some account of Usufruct, and Emphyteusis, and of the rights and obligations of the Usufructuary.

7. What does the first book of the Institutes deal with? and give some account of the Institutions dealt with in it.

8. Classify persons in Roman Law from the point of view of Libertas, Civitas and Familia.

9. Give the different kinds of Tutorship in Roman Law, and explain their object, and the principal duties and obligations of the Tutor.

Explain the maxim, Tutor persone datur; Curator rei.

10. What was Curatorship in Roman Law, and what its different kinds? What kinds exist in our law?



11. Explain :—Adoptio ; Arrogatio ; Legitimatō ; Capitis Diminutio ; Justae Nuptiae ; Matrimonium ; Concubinatus ; Contubernium ; Peculia.

12. Translate :—Sed hoc tempore nullis hominibus, qui sub imperio nostro sunt, licet, sine causa legibus cognita, in servos suos (supra modum) saevire. Nam, ex constitutione divi Antonini, qui sine causa servum suum occiderit, non minus puniri jubetur, quam si alienum servum occiderit. Sed et major asperitas dominorum ejusdem principis constitutione, coercetur ; nam (Antoninus) consultus a quibusdam praesidibus Provinciarum de his servis qui ad aedem sacram vel ad statuam principum confugiunt, praecipit, ut si intolerabilis videatur saevitia dominorum, cogantur servos suos bonis conditionibus vendere ut pretium dominis daretur ; et recte ; expedit enim Reipublicae, ne sua re quis male utatur.

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## OBLIGATIONS

SATURDAY, 21ST OCTOBER, 1895, 3 TO 6 P.M.

*Examiner*,..... N. W. TRENHOLME, D C.L., DEAN.

1. Write briefly on law, its sources, divisions and subject matter.
2. Describe in historic order and classify the different kinds of contracts in Roman Law.
3. Discuss pignus and the growth of the law of security on property.
4. Give the different kinds of deposit and the leading rules on each.
5. Give the different causes of obligations and the essentials of a valid obligation and of a valid contract.
6. What are the principal vices in contracts, and when and by whom may they be invoked ?
7. What remedies have creditors against acts of their debtors, and when and how may they be exercised ?
8. Give the leading rules as to defaults and damages in our law, noting the effect of fraud.
9. Give the leading rules and distinctions as to obligations from torts, and as to the responsibility and recourse of others than the wrong-doer.
10. Discuss *translatio actionis* in torts.
11. Give some account of the different kinds of suretyship in Roman Law, and of the *beneficia* of sureties.

12. Explain : *actio stricti juris* ; *actio directa* ; *actio contraria* ; *nexi* ; *stipulatio de dolo* ; *noxæ deditio* ; *obligatio naturalis* ; *condictio indebiti* ; *læsis*, *edictum*, *nautæ caupones*, etc. ; *actio serviana* and *quasi serviana*.

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### LAW OF REAL ESTATE.

SATURDAY, 14TH MARCH, 1896 :—3 TO 5 P.M.

*Examiner*,.....PROFESSOR WURTELE, D.C.L.

1. In 1759 what tenures existed in the Province of Quebec ?
2. Describe shortly the nature of the tenures under which lands were then held.
3. What tenure was subsequently introduced ?
4. Describe shortly this last tenure.
5. What provisions respecting the granting of lands are contained in the Quebec Act, 1774, and in the Constitutional Act, 1791 ?
6. When and how was the question of what system of laws applied to township lands settled ?
7. When and how was the seigniorial tenure abolished ?
8. Under what tenure are lands now held in the Crown Seignories ? And what modifications in the obligations of their holders have been made ?
9. What law governs lands in Indian Reserves ?
10. How is real estate classified as to its relations with those to whom it belongs ?

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### COMMERCIAL LAW.

#### JOINT STOCK COMPANIES AND CORPORATIONS.

MONDAY, DECEMBER 16TH, 1895.

*Examiner*,.....PROF. DAVIDSON, Q.C., M.A., D.C.L.

1. Where resides the power of creating a corporation, and how is such power exercised in the Dominion of Canada as to the formation of Joint Stock Companies ?
2. What are the peculiar properties or characteristics of the Corporation proper, and how far are they possessed by an incorporated Joint Stock Company ?

3. Explain the meaning of the terms "body politic and corporate" as applied to a Joint Stock Company.

4. What is the relationship existing between the State and the Company incorporated by it, and the Company and its shareholders? Explain fully.

5. Explain the terms "Capital," "Shares," "Shareholder," "Preferential Capital," "Preferential Shares," "Provisional Directors."

6. It is proposed to form a Company with a capital of \$750,000, for the purpose of carrying on within the Dominion the business of manufacturing and selling paper; detail concisely, but fully, the steps necessary to be taken to carry such proposal into effect.

7. How may a person become a shareholder in such Company; what are his rights and obligations as well towards it, as to his co-shareholders and third parties, and how can he escape liability?

8. What is the position of the above Company in the Province of Quebec as to carrying on business there, and holding and dealing in real estate? and refer to decided cases bearing on this question.

9. Explain the terms "nominal" and "paid up" capital, and state how the one may be changed into the other, and the effect, if any, as to the credit of the Company.

10. Explain what is meant by the "corporate powers" of an incorporated Company; how determined; to what extending, and how limited.

11. How are the affairs of a Joint Stock Company administered, and what is the position of the parties relatively to the Company, and what are their chief powers? What is necessary to effective and legal action on their part?

12. State the means of dissolution of a Corporation under the Civil Code, and the application of each to a Joint Stock Company.

13. What is the effect upon the Company of a petition to the Court under the Winding up Act, for the "winding up" of the Company, and what is the position of the liquidator when appointed?

14. How far do the Winding up Act of the Dominion and Amendments thereto, apply to foreign companies doing business in Canada, and having assets here? and refer to and explain the following cases: Allen & Hanson; the Quebec Bank *vs.* Bryant & Powis intervening.

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## CRIMINAL LAW—(Partial Course).

SATURDAY, 28TH MARCH, 1896 :—3 TO 5 P.M.

*Examiner*,..... L. H. DAVIDSON, Q.C., D.C.L.

1. What is a crime? What are its essential elements? Explain each briefly. Distinguish between a crime and a civil injury or wrong.

2. Define the term "Punishment" in connection with crimes, and state what considerations should be taken into account in determining the same.

3. What were the principal divisions of Crimes and Offences before the Code? Explain each, and show how dealt with under the Criminal Code of Canada.

4. How were participants in Crimes formerly classified? Explain the distinction and state what differences if any have been made by the Code.

5. Upon what grounds may a person committing an indictable offence be protected from punishment?

6. Define and distinguish between (a) culpable and non culpable homicide, (b) murder and manslaughter, (c) justifiable and excusable Homicide.

7. Give definition of an unlawful assembly, and distinguish between a *Riot* and an *Affray*.

8. Explain the terms *Misprision*, *Misprision of Felony*.

9. Distinguish between the indictable offences of *Perjury*, *Subornation of Perjury*, *False Oaths* and *Fabricating Evidence*, and state under which general division of Indictable Offences they fall.

10. What changes if any have been made by the Code in the law relating to *Perjury*, and support by reasons.

11. Give the chief ingredients of the crime of *Piracy*, and explain what is meant by the "Law of Nations" in this connection.

12. What is the essence of the offence a "Blasphemous Libel"? State the reasons assignable for its cognizance by Secular Courts.

13. Distinguish between the indictable offences *Escape* and *Rescue*; *Prison Breach* and *Escape*.

## EVIDENCE—(PARTIAL COURSE).

SATURDAY, 13TH APRIL, 1896 :—3 TO 5 P.M.

*Examiner*, ..... PROF. DAVIDSON, D.C.L., Q.C.

1. Distinguish between "Evidence" and "Proof," and between "Direct" and "Presumptive" evidence.

2. State the general principle as to Competency of witnesses, and the leading exceptions thereto ; and explain briefly each of the latter.

3. Explain shortly the distinction between Primary or Best evidence and Secondary evidence ; and show when the latter is admissible.

4. Distinguish between an Authentic and Private Writing, and explain the force of each as proof. Give the principal classes of Authentic writings referred to in the Code.

5. Distinguish between "Admissions" and "Confessions ;" and between Presumptions *juris*, *et juris et de jure* ; both as to character and effect.

6. Explain the different ways under the Code and Code of Civil Procedure by which the testimony of a Party to a suit may be had, and the effect in each case.

7. In what cases may proof be made by testimony under the Code and what limitations if any are there ?

8. State the principal cases of Exclusion of evidence on grounds of Public Policy.

## CONSTITUTIONAL LAW.

SATURDAY, 7TH MARCH, 1896 :—3 TO 5 P.M.

*Examiner*, ..... PROF. ARCH MCGOWN, M.A., B.C.L.

1. In respect to fundamental laws, state the difference between countries that have a written constitution and countries that have not.

2. Explain the doctrine of the Sovereignty of Parliament.

3. How does the British constitution differ from an absolute monarchy on the one hand, and from a pure democracy on the other ?

4. Who is responsible to Parliament for the exercise of the Royal Prerogative, and mention one or two powers exercised in virtue thereof.



5. Show the connection in the British Constitution between the Executive and the Legislative functions of Government.

6. What is given as the date of the origin of the House of Commons; and what is the nature of the mandate from the electors to the members of the House of Commons?

7. Explain the effect on the composition of the Upper House, of its members being nominated by the Crown or Cabinet.

8. In what respect chiefly does the Federal Constitution of Canada differ from the Federal Constitution of the United States?

9. What was decided in the case of the Bank of Toronto *v.* Lamb, with respect to provincial powers of taxation?

10. What was the holding of the Judicial Committee of the Privy Council in the Barrett case, and what in the Brophy case, under the Educational clauses of the Manitoba (Constitutional) Act of 1870?

## BIBLIOGRAPHY OF THE LAW OF LOWER CANADA.

THURSDAY, 24TH OCTOBER, 1895:—4 TO 6 P.M.

*Examiner*,..... ARCH. MCGOWN, M.A., B.C.L.

1. What branch of the law forms the subject of the Civil Ordinance of 1667? Name the author of a commentary upon it. State its relation to our present law.

2. Whose work on the Custom of Paris is used in large and small forms? Name any great commentator upon the Custom.

3. What early system of Roman law was introduced into the Frankish territories before Justinian? Name at least one early commentator on Roman law in France.

4. Give a brief account of Pothier's works, stating what custom formed the base of his commentary, and explain the special importance of his work in its bearing upon our law.

5. State the part taken in preparation for the Code Napoléon by Cambacères.

6. What branches of law in Lower Canada are derived from the laws of England?

7. Distinguish between Ordinances and Statutes in our modern law. Name the periods during which the laws were termed Ordinances.

8. Mention the periods of Sir Matthew Hale, Sir Edward Coke and Sir William Blackstone.

9. In what manner did Lord Mansfield proceed to build up the system of English mercantile law?

10. What drafts of criminal law were prepared by Sir James Fitzjames (Lord Justice) Stephens?

11. Mention two authors on the Law of Bills and Notes.

12. Mention a work by an English writer on the Law of the Constitution; also a work on the British North America Act or on the Federal Constitution of Canada.

13. Name any four series of Reports of cases decided by Courts having jurisdiction in this province.

14. Of what leading work is Demolombe the author, and by whom has his work been continued?

15. Mention recent editions of the Civil Code of Lower Canada, of the Code of Civil Procedure and of the Municipal Code.

### CIVIL LAW. (Prescription.)

SATURDAY, DECEMBER 14th :—AFTERNOON, 2 TO 4.

*Examiner*,.....*PROF. FORTIN.*

1. What is prescription? How many kinds are there? What is the essential condition of each?

2. What is the effect of renunciation to prescription:

(a) Made by anticipation?

(b) Made for the time elapsed?

(c) To prescription acquired? Who can renounce prescription acquired and who cannot?

3. What law governs prescription with regard to immoveables? As to moveables and personal actions?

4. What is possession? How is it acquired? How is it retained and how is it lost?

Describe the different characters possession must have in order to avail for prescription.

5. What is precarious possession ? What is the effect of precarious possession ?

*Quid* as to the successors by universal title of a precarious possessor ?

6. What is interversion of title ? How is it effected ? What is its effect as to prescription ?

7. *Quid* as to purchasers in good faith from precarious possessors ?

8. What is the meaning and effects of the rule that no one can prescribe against his title ? *Quid* as to negative prescription ?

9. How is prescription interrupted :

1. Naturally ?
2. Civilly ?

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### MUNICIPAL LAW.

THURSDAY, APRIL 2ND, 1896 :—AFTERNOON, 3 TO 5.

*Examiner*,..... PROF. FORTIN.

1. What is a municipal corporation ? How many kinds are there ?

2. What are the members of a municipal corporation ? By whom are the affairs of a municipal corporation administered ?

3. What persons compose a county council ? A local council ?

4. How are the members of a local council appointed ? What is a municipal elector ?

5. Describe the proceedings of a municipal election from the opening of the meeting to the holding of a poll, when such poll is necessary.

6. Who can contest the election of a councillor on the ground of violence, corruption, fraud or incapacity, or for non-observance of the necessary formalities ? The election of a mayor upon the same grounds ?

7. How is the contestation made ? By what tribunal is it decided ? What grounds of defence can be urged against the candidate for whom the seat is claimed ?

8. *Quid* if a councillor resigns before the decision of the contestation ? How is his successor appointed ? Within what delay ?

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## REGISTRATION OF REAL RIGHTS.

*Examiner*,.....PROF. MARLER.

1. What real rights are exempt from the formality of registration ?

2. What is the Effect of a delay given for registration.

To what real rights are such delays granted, and their extent ?

3. Explain fully the nature and extent of the vendor's privilege ?

4. What are the Essentials of a conventional Hypothec ?

5. By deed of sale dated 31 January, 1896, A sells to B an immoveable for \$1,000. The deed is registered 15 February. C registers 14 February, 1896, a Hypothec granted by A on 20 December, 1895.

(a) State B's position. (b) If he had not paid the price, would it have made any difference ?

6. By deed dated 31 December, 1895, A sells an immoveable to B for \$3,000, whereof \$1,000 are paid cash, leaving \$2,000 due A. The deed is registered 15 February, 1896. A Hypothec granted by B on same property in favor of C is registered 1st February, 1896.

(a) How do A and C rank ?

(b) How could a different result have been obtained ?

7. A Hypothec is granted by A for \$1,000 in favour of B on property at Longueuil by deed dated January 2nd, 1896, and for \$1,200 in favour of C. on same property by deed dated January 15, 1896. They are sent to the registry office by post and arrive by the same mail.

How do these hypothecs rank ?

8. A, a bachelor, dies in Montreal, leaving nothing but immoveable property there. His father and mother are dead. His heirs-at-law are his three brothers. They sell the property in question within three months of the decease.

a What formalities are necessary to complete the heir's title ?

b How would you establish their heirship ?

c Is the title they give to the purchaser good ?

d What privileged claims might affect the property ?

e If A were married in community with his wife and she survived him, what difference would this make in your answers to a and c.

## CIVIL LAW. (Lease and Hire.)

SATURDAY, 21ST MARCH, 1896 :— 3 TO 5 P.M.

*Examiner*,.....PROFESSOR DOHERTY, D.C.L.

1. What are the essentials of the contract of lease of things ?
2. What are the obligations of the lessor which result from the nature of the contract?

3. A. leases to B. a portion of a building to be used as a photographer's studio. During the term of the lease the proprietor of the adjoining land erects thereon a building, which so darkens the leased premises as to render them unsuitable for B's business.

What recourse, if any, has B against A? What recourse would he have if, in the supposed case, A had himself erected the building on the land adjoining the leased premises?

Give reasons for your answers.

4. A, owner of two adjoining houses, leases one of them to B. During the continuance of the lease, both houses are destroyed by a fire originating in the house leased to and occupied by B.

A alleges that the fire is attributable to B's fault, and claims from him the value of both houses. Upon whom rests the burden of proving the existence or non-existence of the fault alleged?

Give reason for your answer.

5. The lessee of a house assigns his lease. What rights does the assignee acquire against the lessor, and what rights may the latter enforce against such assignee?

The lessee of a house sub-lets the premises leased. What are the rights of the principal lessor against the sub-tenant? What rights may the sub-tenant enforce against the principal lessor?

6. What distinction do you make between the rights of the assignee of a lease against the assignor, and the rights of a sub-tenant against his lessor, the principal tenant?

7. What is the effect upon the rights of the lessee of the sale of the property leased, during the continuance of the lease :

(a) By the lessor ?

(b) By judicial sale upon the lessor, at the instance of his creditors ?

How are the lessee's rights affected by the lessor's ceasing to be owner of the property leased during the continuance of the lease, by the fulfillment of a resolutive condition ?



8. A, a contractor, claims from B, for whom he has erected upon the latter's land a building by contract upon a plan and specifications at a fixed price, a certain sum for extra work ;—how must he establish this claim ? C, a sub-contractor, claims for the same extra work from A ;—how must C establish his claim ?

9. In a contract of lease or hire of personal services, where no term is fixed by express stipulation, how is the duration of the contract determined, and how may the contract be terminated ?

10. In contracts for the manufacture of a particular article, at whose risk is the article while in process of manufacture ?

### PATENTS, TRADE MARKS, ETC.

MONDAY, 20TH APRIL, 1896 :—AFTERNOON, 4 TO 6.

*Examiner*,.....PROFESSOR ABBOTT, Q.C.

1. Define the right of property in (a) Patents of Invention, (b) Trade Marks, (c) Copyright.

2. Who is entitled to obtain Letters Patent of Invention, and what would and would not be the subject matter of a valid Patent ?

3. State the origin of the right ; and briefly trace its development under statutory enactments and jurisprudence.

4. State the procedure to be followed by an applicant for a Patent, specially as to the essential requirements of the Act.

5. What combinations would be patentable and what would not ?

6. In what cases may an inventor lose the right to obtain a Patent or the benefit of it after issue ?

7. Define Trade Marks ; and give the principles governing their validity.

8. In what cases may geographical names and names of persons be used ?

9. State the essential provisions of the Act as to (a) registration, (b) refusal of registration, (c) jurisdiction of the Exchequer Court.

10. State briefly what would constitute valid and inoperative defences to an action for infringement of Trade Mark.

## INTERNATIONAL LAW.

SATURDAY, 15TH FEBRUARY, 1896:—3 TO 6 P.M.

*Examiner*,.....PROF. E. LAFLEUR.

1. Distinguish clearly between Public and Private International Law.
2. Explain and illustrate the principles upon which neutral States should act in recognizing (*a*) the independence, and (*b*) the belligerent rights, of a revolted colony.
3. To what persons and within what limits is the principle of extritoriality applied?
4. What is the effect of the outbreak of war upon:—
  - (*a*) The private property of resident and non-resident subjects of the hostile State found by a belligerent within its landed territory.
  - (*b*) Hostile private property coming within the jurisdiction of such belligerent after the outbreak of the war.
  - (*c*) Hostile private property within the territory of a neutral, or on the high seas under the neutral flag.
  - (*d*) The private property of subjects of a hostile State on the high seas under the hostile flag.
  - (*e*) The private property of subjects of a hostile State found in the landed territory of such State by an invading belligerent.
  - (*f*) The national property of a hostile State in invaded territory.
5. Enumerate the rules of blockade, distinguishing between the continental and the Anglo-American practice.
6. Give an outline of the controversy in regard to the right of belligerent search of convoyed ships. Can the right of search ever be exercised in time of peace?
7. Define domicile, and state how independent persons may acquire a domicile of choice.
8. A French subject domiciled in New York marries in Montreal an English lady domiciled there. No ante-nuptial contract is made. After the marriage the consorts live in New York for five years, and then remove their domicile to Montreal, where the husband dies, leaving moveable and immoveable property in this Province. In an action brought before our Courts:
  - (*a*) What law would govern as to the formal validity of the marriage and as to the capacity of the parties?
  - (*b*) Could the wife claim community of property as to moveable or immoveable property in this Province?

(c) Could she claim dower on immoveables situated in this Province?

(d) Would the same rules be adopted for the solution of the above questions if they were litigated in France?

9. How is foreign law proved before our Courts? What is the presumption as to foreign law alleged but not proved by a party?

10. A domiciled New Yorker makes a will in France in the presence of witnesses according to the forms required by the laws of his domicile, but not in any of the forms prescribed by the French code.

Would the will be held to be valid :—

(a) By the French courts?

(b) By the courts of the State of New York?

(c) By the courts of this Province?

11. Explain the difference between the French and the English doctrine as to the formation of contracts by correspondence. What rule has been adopted by our courts?

12. Are foreign judgments conclusive or examinable upon proceedings taken to enforce them:—

(a) In English Courts?

(b) In French Courts?

(c) In the Courts of this Province?

SATURDAY, FEBRUARY 1ST, 1896 :—4 TO 6 P.M.

FIRST YEAR.

HISTORY OF ROMAN LAW.

*Examiner*,.....PERCY C. RYAN, B.C.L.

1. Show the relationship between primitive custom and modern law.
2. What was the position of women in the Roman law? State the different forms of marriage, and their effects.
3. What was the significance of the pretorship? In what manner did the pretors contribute to the law?
4. Describe the Twelve Tables. Name other primitive codes.
5. What was the golden age of the Roman law? What jurisconsults flourished during it?

6. State the subjects treated in the First Book of Justinian's Institutes.
7. Give the provisions of the Licinian Rogations and of the Lex Semproniana.
8. What is the oldest form of the Roman Will? Compare it with the modern conception of a will.

## CIVIL PROCEDURE.

## SECOND YEAR.

SATURDAY, MARCH 11TH, 1896.

*Examiner*,.....PERCY C. RYAN, B.C.L.

1. Distinguish between Capias and coercive imprisonment (*contrainte par corps*).
2. State the cases in which Capias lies. Draft the affidavit requisite for any one of them.
3. Are septuagenarians liable to Capias? If so, in what cases?
4. Describe the effect of Capias maintained.
5. State fully the cases in which Mandamus lies, and the procedure to obtain it.
6. What proceedings follow upon judgment declaring a corporation to be dissolved?
7. What are the remedies appropriate to :
  - (a) Recover possession of moveables leased;
  - (b) Restrain a corporation from exercising any power not belonging to it;
  - (c) Prevent the judge of an inferior court from hearing a case in which he is interested?

## CIVIL PROCEDURE.

FIRST YEAR.

SATURDAY, MARCH 11TH, 1896.

*Examiner*, ..... PERCY C. RYAN, B.C.L.

1. What provision as to the administration of justice in civil matters is contained in "*The British North America Act, 1867*"?

2. Name the different courts exercising civil jurisdiction in the Province, and state briefly the jurisdiction of each.

3. By what parties are actions instituted on behalf of the following persons: unemancipated minors, emancipated minors, persons provided with judicial advisers, married women, persons interdicted for prodigality, persons interdicted for insanity?

4. Draft the declaration in an action for five thousand dollars damages taken under the following circumstances: A.B., while in the employ of C.D., suffers the loss of an arm owing to the negligence of a fellow-employee and the defective state of a machine.

5. What are grounds for dilatory exception? Can any of them be pleaded otherwise?

6. Describe how contestation upon the merits of an action is proceeded with.

7. When and how can Incidental Demands be made:

- (a) by the plaintiff;
- (b) by the defendant?

## CIVIL LAW (Suretyship and Pledge).

WEDNESDAY, 22nd APRIL, 1896 :—4 TO 6 P.M.

*Professor*, ..... C. A. GEOFFRION, Q.C.*Examiner*, ..... AIME GEOFFRION, Lecturer.

1. Define suretyship and pledge; indicate and explain briefly the principal analogies and differences between those two contracts.

2. Explain briefly the consequences resulting from the fact that suretyship is an accessory contract.



3. Define the special pleas or benefits that the surety can oppose to the demand of the creditors. What kind of pleas are they? In what cases and under what conditions can they be raised?

4. Explain the difference between the two recourses that the surety who has paid has against the principal debtor. Can either of them be more advantageous, according to circumstances? Give reasons and examples.

5. When and under what conditions can a surety claim his discharge because he can no longer be subrogated in the rights, hypothecs and privileges of the creditor? Can that discharge be only partial? If so, when?

6. A. has a claim against B. for which C. is surety. It being due and unpaid by B., A. sues C. who pays him. C. does not notify B. of such payment. A. then applies to B., who, being ignorant of the payment by C., pays a second time. C. later sues B. to be reimbursed. B. pleads that he has paid a second time through his fault in not notifying him of the first payment. C. then sues A., claiming back what he has paid. A. pleads that when C. paid, the debt was due, the only one who can recover from him being B. who paid after the debt was extinct. Give your opinion on those pleas.

7. A party is sued as surety of another. He begins by demanding the discussion of the principal debtor. After the discussion has been made, and the proceeds thereof have proved insufficient to pay the debt, he is called upon by the creditor to plead to the merits of the action for the unpaid balance of the debt. He pleads that he was a conditional surety only, and that the condition has failed. He can prove that plea. Is it good?

8. What is the difference between the "lien" or "droit de retention" and the right of preference of the pledgee on the thing pledged? Against whom does each of these rights take effect?

9. What does the law mean by saying that the pledge is indivisible, although the debt is divisible? Give the reason of the rule, and a case where it would apply.

10. A., on the 1st of April, lends \$1,000 to B., payable on the 1st of June. B. gives him in pledge for that debt certain bank shares. Later, on the 10th of April, A. lends to B. \$500,—payable also on the 1st of June. On the 10th of June neither of the debts were paid. B. wants to get his shares. What must he pay?



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# UNIVERSITY SCHOOL EXAMINATIONS, 1896.

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## I. Preliminary Subjects.

(In the order given in the Regulations.)



## UNIVERSITY SCHOOL EXAMINATIONS.

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### *I. PRELIMINARY SUBJECTS.*

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#### WRITING.

THURSDAY, JUNE 4TH :—AFTERNOON, 4 TO 4.15.

1. Write all the letters of the alphabet in capitals.
2. Write the numerals from 1 to 20.

3. Write the following :—" I was confirmed in this opinion that he who would not be frustrated of his hope to write hereafter in laudable things ought himself to be a true poet ; not presuming to sing praises of heroic men or famous cities, unless he have in himself the experience and practice of all that is praiseworthy."

4. Give your name in full, the name of your school, your age, and state how long you have employed the vertical style of writing, if you use it at all.

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#### ENGLISH DICTATION.

MONDAY, 1ST JUNE :—10.30 TO 11.30 A.M.

It seemed as if all Italy lay under his eyes in that one picture. For there was the broad sunny smile of God, which we fancy to be spread over that favoured land more abundantly than on other regions, and beneath it, glowed a most rich and varied fertility. The trim vineyards were there, and the fig-trees, and the mulberries, and the smoky-hued tracts of the olive orchards : there, too, were fields of every kind of grain, among which waved the Indian corn, putting the spectator in mind of the fondly remembered acres of his father's homestead. White villas, gray convents, church spires, villages, towns, each with its battlemented walls and towered gateway, were scattered upon this spacious map ; a river gleamed across it ; and lakes opened their blue eyes in its face, reflecting heaven, lest mortals should forget that better land, when they beheld the earth so beautiful. What made the valley look still wider, was the two or three



varieties of weather that were visible on its surface, all at the same instant of time. Here lay the quiet sunshine; there fell black patches of ominous shadow from the clouds; and behind them, like a giant of league-long strides, came hurrying the thunder storm, which had already swept midway across the plain. In the rear of the approaching tempest brightened forth again the sunny splendour, which its progress had darkened with so terrible a frown.

N.B.—Notes for local examiner.

This extract is to be read *three times*.

1st. Fluently; the candidates meanwhile listening only. All pens during this reading to be laid on the desks.

2nd. Slowly; the candidates taking it down from dictation.

3rd. For final revision and punctuation. The examiner will indicate only semicolons and full stops.

Any word may be repeated at the request of a candidate; but no explanation of meaning or synonym shall be suggested.

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### ENGLISH GRAMMAR.

MONDAY, 1ST JUNE :—MORNING, 9 TO 10.30.

(N.B.—Answer only two questions from each division.)

#### I.

1. Explain and illustrate the following grammatical terms,—inflexion, gender, voice, suffix, gerund, syntax, subjunctive, prefix, mutes, strong verb.

2. What class of verbs have a passive voice? Give examples and write out the passive voice of a verb other than the one conjugated in your text book (1st per. sing. only).

3. (a) Give all the gender forms corresponding to the following words: heifer, roe, chief, gaffer, charity, spouse, friar; (b) the number forms of the following: trout, genius, buoy, spoonful, data, cloth, index, calf, cherubim: and (c) distinguish between pease and peas, brothers and brethren.

#### II.

4. Give the rules of Syntax which refer to the objective case. Illustrate.

5. Name all the prepositions which may be used after each of the following words: reconcile, exception, confer, adapted, glad, convenient correspond, differ, taste, confine.

6. Comment on the make-up of the following words : threadbare, albeit, embalm, transit, biped, scornful, ignoble, strengthen, segregate, engrave. Give the meaning of each part.

## III.

7. Correct where necessary, giving your reasons for so doing ;—

(a) Whom they were I really cannot specify.

(b) I had scarcely passed the bridge than the flood carried it away.

(c) This will be sufficient for you and I.

(d) Patriotism induces me to draw a veil over the defects of my country, and policy as well as fashion dictate patriotic feelings.

(e) The British people had prospered in peace ; they detested war as cordially as the Peace Society.

8. Construct two complex sentences (the first must contain the word "whether," as a connective, and the second must contain a noun clause.)

Name clauses in the sentences thus constructed, stating of what kind each is.

Analyze the following :

"Had I a heart for falsehood framed,  
I ne'er could injure you."

9. Parse the italicised words in the following :

"Go out, *children*, from the mine and from the *city*,  
Sing out, *children*, as the little thrushes do ;  
Pluck *your* handfuls of the meadow cowslips *pretty*,  
Laugh aloud, to feel your fingers let them through."

## ARITHMETIC.

TUESDAY, 2ND JUNE:—MORNING, 9 TO 10.30.

*Answer two questions from each division. All the work must be shown ; results alone will not be accepted.*

## I.

1. What is the value of a field 2 furlongs in length and 1 furlong 20 rods in breadth, at £4 7s 6d per acre ?

2. A vessel leaves port, having on board 78 men and provisions for 62 days : 14 days later 26 shipwrecked men are picked up. How much longer will the provisions last ?

3. Find the value of  $\frac{3.8\dot{3} - 1.5}{9.7 - 6.4} \div \frac{.10\dot{1} \times 4.1}{2.2\dot{2}}$  of 6 inches.

## II.

4. Find the simple interest on \$448.95 from June 1st, 1896, to the first day of January, 1900, interest reckoned at 6 per cent.

5. A rectangular field is 648 ft. long, and the distance between opposite corners is 810 feet. Find the breadth of the field.

6. A offers \$4,200 cash for a house; B offers \$1,000 cash and \$3,658 to be paid at the end of three years. Which is *now* the better offer and by how much, money being worth 6 per cent. (simple interest)?

## III.

7. Give the table of Measures of Length in the Metric System.

A freight train goes at an average rate of 5 kilometres in 6 minutes. How long will it take to go from Montreal to Ottawa, a distance of 120 miles

8. A owned a house which he rented at \$720 per annum. He sold it for \$9,600, and invested the proceeds in 7 per cent. stock at 98 $\frac{1}{2}$ . Find the alteration in his income if he paid 1 $\frac{1}{2}$  p.c. and  $\frac{1}{4}$  p.c. brokerage on the respective transactions.

9. Define the gram and the litre.

Find the weight in kilograms of a rectangular block of gold 8 inches long, 3 inches wide, and 2 inches thick, gold being 19 $\frac{1}{2}$  times as heavy as water.

## PRELIMINARY GEOGRAPHY.

THURSDAY, 4TH JUNE :—AFTERNOON, 2 TO 3.

(N. B. Answer ONLY two questions from each division. *No 2 must be attempted by all.*)

## I.

1. Define or explain the following terms, giving examples wherever possible :—

Antipodes, bight, delta, cyclone, monsoon, oasis, pampas, plateau, solstice, tundras.

2. Describe briefly a trip around the world, starting from Montreal, travelling under the British flag and landing only on British soil.

Your description should include the following points : modes of travel, lands, waters passed or crossed, and striking customs of peoples.

3. Name the provinces of Canada which border on the sea coast, the principal cities of each province, and give some indication of the chief industry of each city.

## II.

4. What and where are the following :

Transvaal, Yukon, Venezuela, Soudan, Delagoa. Congo, Corea, Behring, Abyssinia, Cuba.

5. Draw an outline map of South America : trace the course of the chief rivers ; locate on this map the chief products of the continent.

6. Describe the general physical formation and climate of the following : Switzerland, Nova Scotia, Iceland, Holland, Italy.

Using any two of these as illustrations, trace if you can the influence of a country's physical characteristics and climate on the nature and habits of its people.

## III.

7. Locate the following : Anticosti, Bab-el-Mandeb, Comorin, Cattegat, Fundy, Honolulu, Mozambique, Needles, Malacca, Juan de Fuca.

8. Name the rivers flowing into the Mediterranean or the Black Sea, giving the name of one or more city on each. Describe carefully the course of any one of these rivers.

9. In what direction is Washington from Ottawa, London from Portsmouth, Athens from Constantinople, Tokio from Peking, Madagascar from Egypt ? What flag floats over each of the above ?

## BRITISH HISTORY.

TUESDAY, 2ND JUNE :—10.30 TO 12 A.M.

Answer the first question and any two of the others.

1. Write briefly but clearly on the following subjects :

(a) The conversion of the English to Christianity.

(b) The means taken by William the Conqueror to reduce England, after the battle of Hastings.

(c) That part of the Hundred Years' War which falls within the reign of Edward III.

(d) Yorkist pretenders in the reign of Henry VII.

(e) The Earl of Strafford's political policy.

2. Give an account of the circumstances leading to :

- (a) The summoning of the first Parliament.
- (b) The Declaration of Rights.

3. What at their greatest extent were the possessions of England during the reigns of :

- (a) Henry II.
- (b) George III.

4. Assign important events to the following years: 1002, 1215, 1588, 1704, 1832.

### III. CANADIAN HISTORY.

Answer the first two questions and one of the others.

5. What do you know about :

- (a) The voyages of Jacques Cartier.
- (b) The character and services of Samuel de Champlain.
- (c) Montcalm's campaigns.

6. (a) Mention the terms which the French in Canada received upon the cession of Canada to England.

- b Why is the Quebec Act important?
- (c) What part did Brock play in the War of 1812?

7. Describe the events of 1837.

8. Make brief notes on: United Empire Loyalists, Lord Dorchester, Chateauguay, Lord Elgin, Fenian raids.

### NEW TESTAMENT HISTORY.

THURSDAY, 4TH JUNE :—AFTERNOON, 3 TO 4.

(N.B.—Answer *two* questions out of each group.)

#### I.

1. (a) How old was Christ when He began His public ministry?  
(b) Give a synopsis of His life up to this time.
2. Give particulars concerning the birth and death of John the Baptist.
3. (a) Write the names of the Apostles.  
(b) What can be gathered from the Gospels as to their occupations?



## II.

4. (a) Describe the first miracle wrought by our Lord.  
(b) What else did He do at the same place?
5. (a) How many persons did Christ raise from the dead?  
(b) Give an account of the raising of any one.
6. Write the substance of St. Luke's account of our Lord's appearing to the two disciples on the way to Emmaus.

## III.

7. Describe as tersely as you can what took place on the day of Pentecost.
8. (a) How many missionary journeys did St. Paul make?  
(b) Name places visited and notable events which took place on the first one.
9. Write a fact in connection with each of the following :—Golgotha, Bethany, Solomon's Porch, Rhoda, Cornelius, Sergius Paulus, Antioch, Treas, Tertullus, Appii forum.



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## II. Optional Subjects.

(In the order given in the Regulations.)

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## II. OPTIONAL SUBJECTS.

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### LATIN GRAMMAR AND COMPOSITION.

WEDNESDAY, JUNE 3RD :—9 TO 10.15 A.M.

(In answering questions 1 to 6 candidates are requested to mark by the usual sign all *long vowels*, and *these only*.)

1. Decline *hortus*, *cliens*, *vis*, *senex*, *unus*, and *quis*. Decline together *iste vir*, *utrumque genus*.

2. Give the genitive and ablative singular of *pinus*, *mare*, *avis*, *ovis*, *fons*: the genitive, dative and ablative, singular and plural, of *bonus* and *deus*.

3. State the general rules of gender of Latin nouns and quantity of vowels.

4. Give the future indicative and present subjunctive, active, of *moneo* and *fero*; present and perfect indicative of *sum*, *volo*, and *capio*.

5. Give the principal parts and meaning of *placo*, *placeo*, *fungor*, *parco*.

6. Give the Comparative and Superlative of *iustus*, *utilis*, *malus*, *inferus*, *benevolus*, *bene*.

7. What case-constructions follow the words: *pareo*, *misereri*, *obliviscor*, *vesci*, *interest*, *taedet*?

8. What classes of verbs govern the dative? How are they used in the passive?

9. Translate into Latin: (1) This is the Roman camp. (2) They persuaded their neighbours to adopt the same plan. (3) At last, disappointed in their hope, they abandoned their attempt. (4) We must obey the laws of nature. (5) Caesar said that when he had conquered the Gauls, he would return home.

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### CAESAR AND VIRGIL.

WEDNESDAY, JUNE 3RD, 1896:—10.15 TO 12 A.M.

1. Helvetii omnium rerum inopia adducti legatos de deditione ad eum miserunt. Qui cum eum in *itinere* convenissent seque ad pedes proiecissent t



suppliciterque *locuti* flentes pacem petissent, atque eos in eo loco, quo tum essent, suum adventum expectare *iussisset*, paruerunt. Eo postquam Caesar pervenit, *obsides*, arma, servos, qui ad eos per fugissent, poposcit. Dum ea conquiruntur et conferuntur, nocte intermissa circiter hominum milia vi eius pagi, qui Verbigenus appellatur, sive timore perterriti, ne armis traditis supplicio afficerentur, sive spe *salutis* inducti, quod in tanta multitudine dediticiorum suam fugam aut occultari aut omnino ignorari posse existimarent, prima nocte e castris Helvetiorum *egressi* ad Rhenum finesque Germanorum contenderunt.

2. Parse *fully* the words italicised. Give the rules for the case or construction of—*inopia*, *nocte intermissa*, *milia*, *fugam*, *prima nocte*.

3. Horum adventu tanta rerum commutatio est facta, ut nostri etiam qui vulneribus confecti procubuissent, scutis innixi proelium redintegrarent; tum calones perterritos hostes conspicati etiam inermes armatis occurrerent, equites vero, ut turpitudinem fugae virtute delerent, omnibus in locis pugnae se legionariis militibus praeferrent. At hostes etiam in extrema spe salutis tantum virtutem praestiterunt ut, cum primi eorum cecidissent, proximi iacentibus insisterent, atque ex eorum corporibus pugnarent; his deiectis et coacervatis cadaveribus, qui superessent, ut ex tumulo, tela in nostros conicerent et pila intercepta remitterent.

4. Draw a rough map of Gallia, showing its four chief divisions with their boundaries. Give the modern names of rivers and towns mentioned in the books you have read.

5. Translate :—

Tum breviter Dido, vultum demissa, profatur :  
 Solvite corde metum, Teucri, secludite curas,  
 Res dura et regni novitas me talia cogunt  
 Moliri, et late fines custode tueri.  
 Quis genus Aeneadam, quis Troiae nesciat urbem,  
 Virtutesque virosque, aut tanti incendia belli ?  
 Non obtunsa adeo gestamus pectora Poeni,  
 Nec tam aversus equos Tyria Sol iungit ab urbe  
 Seu vos Hesperiam magnam Saturniaque arva,  
 Sive Erycis fines regemque optatis Acesten,  
 Auxilio tutos dimittam, opibusque iuvabo.  
 Vultis et his mecum pariter considerare regnis ?  
 Urbem quam statuo, vestra est; subducite naves;  
 Tros Tyriusque mihi nullo discrimine agetur.  
 Atque utinam rex ipse Noto compulsus eodem  
 Adforet Aeneas !

6. Parse *fully* the words italicised and give the nom. and gen. in both the sing. and plural of each. Write explanatory notes on the 8th, 9th and 10th lines.

7. In the first four lines mark every syllable, long or short; mark off the feet by upright single strokes; say what a caesura is; and mark the principal caesura in each line by double upright strokes.

8. Translate :—

Ille Sychaeum  
Impius ante aras atque auri caecus amore  
Clam ferro incautum superat, securus amorum  
Germanae; factumque diu celavit, et aegram,  
Multa malus simulans, vana spe lusit amantem.

9. Explain the following phrases and expressions: *Cerealia arma*; *spretæ iniuria formæ*; *gens togata*; *forsan et hæc olim meminisse uvabit*; *pius æneas meus sibi conscia recti*; *reliquiae Dardanum*.

## XENOPHON AND HOMER.

WEDNESDAY, JUNE 3RD, 1896 :—3.15 TO 5 P.M.

The answers to the questions in groups (A) and (B) to be kept separate.

### A.

1. (a) Translate Xenophon, *Anabasis*, Bk. I., cap. IV. § 14.

“ Ἄνδρες, ἐὰν ἐμοὶ πεισθῆτε, οὔτε κινδυνεύσαντες, οὔτε ποήσαντες, τῶν ἄλλων πλέον προτιμήσεσθε στρατιωτῶν ὑπὸ Κύρου. Τί οὖν κελίω ποιῆσαι· Νῦν δέεται Κύρο' ἔπεσθαι τοὺς Ἕλληνας ἐπὶ βασιλείᾳ· ἐγὼ οὖν φημὶ, ὑμᾶ' χρῆναι διαβῆναι τὸν Εὐφράτην ποταμὸν, πρὶν δῆλον εἶναις ὅτι οἱ ἄλλοι Ἕλληνες ἀποκρινοῦνται Κύρῳ. \* Ἦν μὲν γὰρ ψηφίσωνται ἔπεσθαι, ὑμεῖς δόξετε αἵτιοι εἶναι, ἄρξαντες τοῦ διαβαίνειν· καὶ ὡς προθυμοτάτοις ὑμῖν οὔσι χάριν εἴσεται Κύρος καὶ ἀποδώσει· (ἐπίσταται δ' εἴ τις καὶ ἄλλος) ἣν δ' ἀποψηφίσωνται οἱ ἄλλοι, ἅπιμεν μὲν πάντες

εἰς τοῦμπαλιν· ὑμῖν δ', ὡς μόνοις πειθομένοις, πιστοτάτοις χρήσεται καὶ εἰς φρούρια καὶ εἰς λοχαγίας, καὶ ἄλλοῦ οὐτινος ἂν δέσθε, οἶδα, ὅτι ὡς φίλοι τεύξεσθε Κύρου. Ἀκούσαντες ταῦτα ἐπείθοντο καὶ διέβησαν, πρὶν τοὺς ἄλλους ἀποκρίνασθαι.

(b) Ἐπεὶ δὲ κατεπέμφθη ἰπὸ τοῦ πατρὸς σατράπης Λυδίας τε καὶ Φρυγίας τῆς μεγάλης καὶ Καππαδοκίας, στρατηγὸς δὲ καὶ πάντων ἀπεδείχθη, οἷς καθήκει εἰς Καστωλοῦ πεδίου ἀθροίζεσθαι, πρῶτον μὲν ἐπέδειξεν αὐτὸν, ὅτι περὶ πλείστου ποιοῖτο, εἴ τῳ σπεῖσαιτο, καὶ εἰ τῳ σύνθοιτο καὶ εἴ τῳ ὑπόσχοιτό τι, μηδὲν φεύδεσθαι. Καὶ γὰρ οὖν ἐπίστευον μὲν αὐτῷ αἱ πόλεις ἐπιπρεπόμεναι, ἐπίστευον δ' οἱ ἄνδρες· καὶ εἴ τις πολέμιος ἐγένετο, σπείσαμένου Κύρου, ἐπίστευε μηδὲν ἂν παρὰ τὰς σπονδὰς παθεῖν. Το γαροῦν ἐπεὶ Τισσαφέρνει ἐπολέμησε, πᾶσαι αἱ πόλεις ἐκούσαι Κῦροι εἶλόντο ἀντὶ Τισσαφέρνους, πλὴν Μιλησίων· οὗτοι δὲ, ὅτι οὐκ ἤθελε τοὺς φεύγοντας προέσθαι, ἐφεβούντο αὐτόν. Καὶ γὰρ ἔργῳ ἐπεδείκνυτο, καὶ ἔλεγεν, ὅτι οὐκ ἂν ποτε πρόοιτο, ἐπεὶ ἅπαξ αὐτοῖς φίλος ἐγένετο, οὐδ' εἰ ἔτι μὲν μείους γένοιτο, ἔτι δὲ καὶ κάκιον πράξειαν.

2. Explain the subject of the clause underlined in passage (b) and the construction of σπείσαμένου Κύρου.

3. Parse πεισθῆτε, διαβῆναι, εἴσεται, ἄπιμεν, δέσθε ἀκούσαντες.

4. Distinguish κατεπέμφθη from μετεπέμφθη. What is the force of the middle voice of μεταπέμπω? Give an instance from this book.

5. Derive ἐπισιτίσαντο, ἐνεδρεῦσας, σκηπτούχων, δρε, πανηφόρα, φιλοθηρότατος.

6. Translate the following detached passages: (a) Καὶ ἄρκτον ποτὲ ἐπιφερομένην οὐκ ἔτρεσεν. (b) πάντων πάντα κράτιστος ἐνομίζετο. (c) Ὅι δὲ ἐπεὶ προΐδοιεν, διόταντο. (d) φοβούμενος μὴ κυκλωθεῖη ἐκατέρωθεν. (e) μετεώρους ἐξεκόμισαν τὰς ἀμᾶξας—distinguish ποτε and ποτὲ. What is the construction of πάντα in (b). What is the force of the suffix *θεν*? Derive μετεώρους.

## B.

## HOMER, Iliad, Book IV.

1. Give a short summary of the events described in this book, and explain the ancient titles ὄρκων σύγχυσις and Ἀγαμέμνωνος ἐπιπώλησις.

2. Translate :—

Ὡς φάτ' Ἀθηναίη, τῷ δὲ φρένας ἄφρονι πείθην  
 αὐτίκ' ἐσύλα τόξον ἐύξοον ἰξάλου αἰγὸς  
 ἀγρίου, ὃν ῥά ποτ' αὐτὸς ὑπὸ στέρνοιο τυχήσας  
 πέτρης ἐκβαίνοντα, δεδεγμένος ἐν προδοκῇσιν,  
 βεβλήκει πρὸς στήθος· ὁ δ' ὕπτιος ἔμπεσι πέτρῃ.  
 τοῖ κέρα ἐκ κεφαλῆς ἐκκαϊδεκάδωρα πεφύκει  
 καὶ τὰ μὲν ἀσκήσας κεραοξόος ἤραρε τέκτων,  
 πᾶν δ' εὖ λειήνας χρυσέην ἐπέθηκε κορώνην.  
 καλὸν μὲν εὖ κατέθησε τανυσσάμενος, προτὶ γαίῃ  
 ἀγκλῖνας· πρόσθεν δὲ σάκεα σχέθον ἐσθλοὶ ἑταῖροι,  
 μὴ πρὶν ἀναΐξειαν Ἀρήϊοι ὕιες Ἀχαιῶν,  
 πρὶν βλησθαι Μενέλαον Ἀρήϊον ἀρχὸν υἱόν.

3. Parse στέρνοιο, δεδεγμένος, βεβλήκει, ἔμπεσε, ἤραρε, ἀγκλῖνας, giving the principal parts of the verbs.

4. Translate :—

Τὸν δ' ἄρ' ὑπόδρα δὼν προσέφη πολύμητις Ὀδυσσεύς,  
 „Ἀτρεΐδῃ, ποῖόν σε ἔπος φύγεν ἕρκος ὀδόντων.

πῶς δὴ φῆς πολέμοιο μεθιέμεν; ὁππότε 'Αχαιοὶ  
 Τρῶσιν ἐφ' ἵπποδάμοισιν ἐγείρομεν ὄξυν' Ἀρηα,  
 ὄψεαι, ἡνέθελθῃσθα, καὶ αἶ κέν τοι τὰ μεμήλη  
 Τηλεμάχοιο φίλον πατέρα προμάχοισι μιγέντα  
 Τρώων ἵπποδάμων· σὺ δὲ ταῦτ' ἀνεμώλια βάζεις."

Τὸν δ' ἐπιμειδήσας προσέφη κρείων 'Αγαμέμνων,  
 ὥς γινῶ χωομένοιο· πάλινδ' ὄγε λάξετο μῦθον

„Διογενὲς Λαερτιάδη, πολυμήχαν' 'Οδυσσεῦ,  
 οὔτε σε νεικεῖω περιώσιον οὔτε κελεύω·  
 οἶδα γὰρ ὥς τοι θυμὸς ἐνὶ στήθεσσι φίλοισιν  
 ἤπια δηνεοῖδε· τὰ γὰρ φρονέεις ἅτ' ἐγὼ περ.  
 ἀλλ' ἴθι—ταῦτα δ' ὅπισθεν ἀρεσσόμεθ'—εἴ τι κακὸν νῦν  
 εἴρηται, τὰ δὲ πάντα θεοὶ μεταμῶνια θεῖεν.,,

5. Derive ὑπόδρα, ἵπποδάμοισιν, προμάχοισι, πολυμήχανε, μεταμῶνια.

6. Exemplify any uses of the subjunctive mood in Homer, not found in Attic Greek.

7. What was the digamma? Mention any traces of it found in this book. Are there traces of other lost consonants in Homer?

8. Give the scheme of the Homeric Hexameter (scan the first four lines of 4).

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#### GREEK GRAMMAR.

WEDNESDAY, JUNE 3RD, 1896 :—2 TO 3.15 P.M.

1. Decline πολίτης, νῆσος, λέων, βασιλεύς, οὔτος, ἀληθής, εἰς.



2. Define the term *stem*. Give the stem of λόγος, λέων, βασιλεύς, λείπω, τίθημι.

3. Inflect the present, imperfect and perfect indicative, active, of λύω; future optative middle of φαίνω; and aor. subjunctive active of δίδωμι.

4. (a) State the construction of verbal adjectives in Greek. Give their terminations. What is their equivalent in Latin? (b) What is the force of the infinitive mood with the article? When may the infinitive mood have the nominative case as an antecedent? (c) Give the principal uses of the optative mood with or without ἄν. (d) What effect have two or more negatives in a Greek sentence?

5. Write the first future, aorists, perfect and plup. 1st person sing. only, active voice of τυγχάνω, πάσχω, ἐλαύνω, βλώσχω, κλαίω, ἵστίημι, μανθάνω.

6. Write the gen. dat. accus. sing. and dat. plur. of μελισσα, ἀγυιὰ, ἀγορά, δόρυ, δράκων, ἀγὼν ποῦς, ὁδοῦς, λεῶς.

7. (1) Compare ταχὺς, εὐρύς, νέος, μάκαρ, παλαιός. (2) Give the Greek for 100, 70, 12, 600, the tenth, 6 times. (3) Distinguish ὅς, ὁ, ὅυτος, ἐκεῖνος, τις when it is the first word in a sentence, and at other times.

8. Put into Greek: (1) They happened to be present. (2) They were arranged four deep. (3) He tried to force his soldiers to advance (the endeavour expressed by the imperfect tense indic.) (4) They said that they would not go. (5) Some thought one thing, some another. (6) Clearchus narrowly escaped being stoned to death. (7) Cyrus cut down the trees, and utterly burnt the palace.

## FRENCH.

LE LUNDI, 1<sup>ER</sup> JUIN 1896.

## A. GRAMMAIRE.

1. Copier le passage suivant, en remplaçant les infinitifs par les formes que le sens exige :

Quand Rome (conquérir) la Gaule, elle (faire) de Lutère une ville romaine, c'est-à-dire qu'elle y (importer) ce qu'elle (mettre) en tout pays conquis : un camp pour la garder, un palais pour la gouverner, un cirque pour l'amuser, un temple pour la convertir, un aqueduc pour l'abreuver. Le camp sur le plateau du Luxembourg, le palais à moitié côté de la montagne Sainte Geneviève, le cirque à l'entrée du faubourg Saint-Germain, le temple au chevet de la Cité, et l'aqueduc sur la colline d'Arcueil. Le tout au midi. Rome (entrer) par là.

Ce (être) alors que Julien, (surnommer) l'Apostat, (venir) faire à Lutère son apprentissage de César.

Julien (porter) l'âme d'un juste sous le manteau d'un cynique. Il ( falloir) aller le chercher au fond d'une cave pour l'obliger à subir le titre d'empereur.

Il (savoir) vivre honnêtement, et mieux encore, il (savoir) mourir.

PELLETAN.

2. Faire l'analyse logique de la phrase suivante : Pardonnez leur, Seigneur, ils ne savent ce qu'ils font,

3. Comment se forme en général l'adverbe français, et pourquoi est-il ainsi formé? Exemples.

4. Donner les temps primitifs des verbes suivants : Avoir, battre, courir, dire, faire, joindre, mettre, mourir, prendre, partir, rire, savoir.

5. Dater en toutes lettres.

*N.B.—Répondre en français.*

## B. TRADUCTION.

1. Traduire en anglais :

Deux hommes étaient voisins, et chacun d'eux avait une femme et plusieurs petits enfants, et son seul travail pour les faire vivre.

Et l'un de ces deux hommes s'inquiétait en lui-même, disant : Si je meurs ou que je tombe malade, que deviendront ma femme et mes enfants ?

Et cette pensée ne le quittait point, et elle rongait son cœur comme un ver ronge le fruit où il est caché.

Or, bien que la même pensée fût venue également à l'autre père, il ne s'y était point arrêté; car, disait-il, Dieu qui connaît toutes ses créatures, et qui veille sur elles, veillera aussi sur moi, et sur ma femme, et sur mes enfants.

Et celui-ci vivait tranquille, tandis que le premier ne goûtait pas un instant de repos ni de joie intérieurement.

Un jour qu'il travaillait aux champs, triste et abattu à cause de sa crainte, il vit quelques oiseaux entrer dans un buisson, en sortir, et puis bientôt y revenir encore.

Et s'étant approché, il vit deux nids posés côte à côte, et dans chacun plusieurs petits nouvellement éclos et encore sans plumes.

LAMENNAIS.

## 2. Traduire en français :

Time is precious, life is short, and consequently not a single moment should be lost. Sensible men know how to make the most of time; they are never idle but continually employed, either in amusements or study. It is a universal maxim—that idleness is the mother of vice; it is, however, certain that laziness is the inheritance of fools, and nothing can be so despicable as a sluggard.

C. DICTÉE.

Aller en voiture, vous croyez que c'est une jouissance du riche? Vous vous trompez, ce n'est qu'une servitude que sa vanité lui impose.

S'il en était ainsi, pourquoi ce monsieur ou cette dame, qui sont maigres comme un fagot d'épines, et qu'un âne porterait surabondamment, feraient-ils atteler quatre chevaux à leur carrosse?

Pour moi, quand je suis sur la pelouse, dans la mousse jusqu'à la cheville du pied; quand je vais, les mains dans mes poches, au gré d'un beau chemin de traverse; ou que je suis lentement, par un beau clair de lune, le chemin blanc qui festonne d'un côté l'ombre des haies, je voudrais bien voir qu'on eût l'insolence de venir m'offrir une voiture.

CH. TILLIER.

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L'examinateur est prié de vouloir bien faire et recueillir la dictée avant la distribution du présent papier et de faire écrire chaque chapitre dans un cahier séparé

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## GERMAN.

JOYNE'S GERMAN READER, GERMAN GRAMMAR

TUESDAY, JUNE 9TH :—MORNING, 9 TO 10.30.

## 1. Translate into English :—

(a) Als nun die gesetzte Zeit herum war, *kamen* sie bei ihrem Vater wieder zusammen; sie *wussten* aber nicht, wie sie die beste Gelegenheit *finden sollten*, ihre Kunst zu zeigen, *sassen* beisammen und ratschlagten. Wie sie so *sassen*, *kam* auf einmal ein Hase *uber's Feld daher gelaufen*. „Ei,“ sagte des Barbier, „der kommt wie gerufen,“ nahm Becken und Seife, schäumte, bis der Hase in die Nähe kam, dann schäumte er ihn in vollem Laufe ein und rasierte ihm auch in vollem Laufe sein Stutzbärchen, und dabei schnitt er ihm nicht und *that ihm an keinen Haare weh*. „Das gefällt mir,“ sagte der Vater, „wenn sich die andern nicht gewaltig angreifen, so ist das Haus dein.“

(b) Es schimmert der Tau im grünen Plan  
Wie Perlen auf schimmernder Seide,  
Als hätte die Flur auch angethan  
Sonntägliches Festgeschmeide.

Es ist, als fängen die Vögel auch  
Heut' schöner als andere Tage,  
Als dufteten heut' mit stärkerem Hauch  
Die Blumen in Feld und Hage.

Und Orgeltöne tönen von fern,  
Von Morgenlüften gehoben,  
Und alles betet: „Wir loben den Herrn  
Und wollen ihn ewig loben“

## 2. Translate into German :—

(a) Would you be happy if you were rich? (b) Where is the knife that you ground? (c) The days in June are the longest in the whole year. (d) Buying is pleasant, but paying is very disagreeable. (e) All America does not belong to the United States. (f) People take cold easily when they are tired. (g) Our father lived at peace with his neighbors. (h) Charles, you have answered well, sit down. (i) You are tired because you have studied too much. (j) The teacher is ashamed of her.

3. (a) Give the third person singular of the following tenses: present indicative passive of *loben*, imperfect subjunctive and perfect of *jungen* (b) Translate:—I had fallen, shall have fallen, I have praised, I shall have been. (c) Conjugate the present indicative of *tanzen*, the present subjunctive of *sein*, past conditional of *kommen*.

4. Decline in the singular: *seine rauhe Stimme*, *mancher junge Mann*.

5. (a) Give the genders of *Weilchen*, *Landchaft*, *Univerſität*, *Stoffung*. (b) Turn the following sentence into the passive voice, *Er hat mir Hilfe versprochen*. (c) What kinds of antecedents may the pronoun *was* have?

6. Translate:—

(a) The dog has lost *its* bone. Explain briefly the employment of the German equivalent of *its* in this sentence.

(b) Der Menich ist ſterblich.  
Ich habe Gold und Silber.  
Daß ſchöne Frankreich.

Comment on the use or omission of the definite article in the preceding.

7. State what you know about the order of:—(a) pronouns in general, (b) personal pronouns, (c) adverbs.

8. Parse the words in italics in I (a).

9. What do you know about the mood and tense of indirect narration.

10. Translate the second of the following passages with the help of the first.

### Der Bettler.

Ein reicher Mann ging an einem kalten Wintertage ſpazieren. Er hatte ſich ſo warm wie möglich angezogen. Troß alle dem fror ihn ſo, daß ihm die Zähne klapperten. Er ſah einen armen Bettler und wunderte ſich nicht wenig, wie es dem Bettler möglich ſei, ſo



halb nackt herumzulauften, ohne die Kälte scheinbar zu fühlen. „Das kann ich Ihnen leicht erklären," sprach der Bettler. „Wenn ich ausgehe, so ziehe ich alle meine Kleider an, aber Sie lassen den größten Theil Ihrer Kleider zu Hause. Es sind die Kleider, die Sie zu Hause gelassen haben, welche Ihnen das Wetter so kalt scheinen lassen."

#### THE BEGGAR.

A rich man wanted to take a walk on a cold winter day. After he had dressed himself as warmly as possible, he went out. Although he had put on his warmest clothing, the cold was so great that his teeth chattered. He wondered not a little when he saw a beggar who was going about half naked and apparently not feeling the cold. "That is easy to explain," said the beggar. "When I want to take a walk on a cold day, I put on all my clothing; but you have left the greater part of your clothing at home. It is not the clothing which you have put on, but that which you have left at home, which makes the day seem so cold to you."

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#### GEOMETRY.

TUESDAY, JUNE 2ND, 1893: — AFTERNOON, 2 TO 4.

#### I

*(Answer any two of the 3 in each group.)*

(1) (a) The greater side of every triangle has the greater angle opposite to it.

(b) State and prove the converse of (a).

(2) (a) Define a parallelogram and trapezium.

(b) Prove that parallelograms on equal bases and between the same parallels are equal.

(c) If the diagonals of a quadrilateral bisect each other at right angles the figure is an equilateral parallelogram.

(3) (a) In any right-angled triangle the square on the side subtending the right angle equals the sum of the squares on the sides containing the right angle.

b) Describe a square double of a given square.

II

(4) (a) A B is bisected in C, divided in D.

Prove that rectangle A D, D B together with square on C D equals square on C B.

(b) Enunciate the corresponding property for the case in which D is in A B produced.

(c) Show that (a) and (b) can both be reduced to the form: "Difference of two squares" equals rectangle contained by the sum and the difference of the sides of those squares.

(5) (a) In a circle state carefully the property of a central point and of a non-central point as regards equality of radiating straight lines.

(b) Prove that one circumference of a circle cannot cut another in more than two points.

(6) (a) To divide a straight line A B in a point, say Q, so that rectangle A B, Q B = square upon A Q.

(b) Find another point with the same property in B A produced.

III

(7) A B C is a triangle, B an acute angle, A D perpendicular on the line of the base B C.

(a) In any kind of triangle, prove that square on A C is less than sum of squares on A B, B C by twice the rectangle C B, B D.

(b) In a parallelogram the sum of the squares of the sides equals the sum of the squares of the diagonals.

(8) (a) The opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles.

(b) Show that none but rectangular parallelograms can have their corners on a circle.

(9) (a) From a given circle cut off a segment containing an angle equal to a given rectilinear angle.

(b) If two circles touch one another, any straight line drawn through the point of contact will cut off similar segments.

ALGEBRA.

MONDAY, JUNE 1ST :—AFTERNOON, 2 TO 3.30.

1. Simplify

$$\frac{\frac{a+b}{a-b} - \frac{a-b}{a+b}}{1 - \frac{a^2+b^2}{(a+b)^2}}$$

2. Resolve into elementary factors :

$$(a) x^2 - 16 ax + 63 a^2$$

$$(b) x^2 - 4 xz^2 - 45 z^4$$

$$(c) 3 ax - bx - 3 ay + by$$

$$(d) c^2 - x^2 - y^2 + 2 xy$$

$$(e) a^6 b^6 - 64 c^{12}.$$

3. Write down (a) the cube of  $(x-3y)$ , and (b) the square of  $(a^2-2b+c)$ , also (c) extract the square root of

$$x^4 - 6 x^3 y + 13 x^2 y^2 - 12 x y^3 + 4 y^4.$$

4. Solve the following equations :

$$(a) \frac{7x-5}{6} - \frac{5x+6}{4} = \frac{8-5x}{12}$$

$$(b) \frac{x-3}{x+2} = \frac{x-3}{2x-1} + \frac{1}{2}$$

$$(c) \sqrt{x} - \sqrt{a+x} = \sqrt{\frac{a}{x}}$$

5. A regiment being formed into a solid square, it was found that there were 45 men over; but when formed similarly with one man more on a side, there were 16 men wanting to complete the square. Find the number of men in the regiment.

6. Solve the following equations :

$$(a) \begin{cases} \frac{x-1}{8} + \frac{y-2}{5} = 2 \\ 2x + \frac{2y-5}{3} = 21. \end{cases}$$

$$(b) x^2 - 10x + 24 = 0$$

$$(c) ax^2 + bx + c = 0$$

7. A grocer wishes to mix coffee worth 80 cents a pound with another sort worth 50 cents a pound, to make 120 pounds worth 60 cents a pound. What quantity of each sort must he take ?

## TRIGONOMETRY.

TUESDAY, JUNE 2ND:—AFTERNOON, 4 TO 5.30.

1. Express .235 of a right angle in circular measure, also in English and French measure.

2. (a) Trace the changes in the co-tangent of an angle, as the angle increases from  $0^\circ$  to  $360^\circ$ .

(b) Trace the change in  $(\sin A + \cos A)$  in the first quadrant.

3. (a) Express each trigonometrical ratio as the reciprocal of an other.

(b) Shew that  $\sin A, \cot A, \sec A = \cos A, \tan A, \operatorname{cosec} A$ .

(c) Verify (b) when  $A = 30^\circ$ .

(d) Prove that  $\cot^2 \theta + \tan^2 \theta = \operatorname{cosec}^2 \theta, \sec^2 \theta - 2$ .

(e) Prove also  $\tan^2 A - \tan^2 \beta = \frac{\cos^2 \beta - \cos^2 A}{\cos^2 \beta \cdot \cos^2 A}$ .

4. Having given  $\sin A$ , find (1)  $\sin (180 - A)$ , (2)  $\sin (90 + A)$ .

5. Prove by the help of a figure

(a)  $\sin (A + \beta) = \sin A \cos \beta + \cos A \sin \beta$

(b)  $\cos (A - \beta) = \cos A \cos \beta + \sin A \sin \beta$

(c) Prove also that

$\sin A = \sin \beta \cos (A - \beta) + \cos \beta \sin (A - \beta)$ .

6. Prove (a)  $\cos Q + \cos P = 2 \cos \frac{P+Q}{2} \cos \frac{P-Q}{2}$

(b)  $\cos Q - \cos P = 2 \sin \frac{P+Q}{2} \sin \frac{P-Q}{2}$ .

## ENGLISH LANGUAGE.

MONDAY, 8TH JUNE, 1896 :—AFTERNOON, 3.30 TO 5.30.

(N.B.—Not more than *two* questions from each division are to be answered.)

### I.

1. Give *two* examples of each of the following, and explain their origin : (a) English inseparable prefixes ; (b) words derived from the names of persons ; (c) words disguised in form ; (d) words that have greatly changed in meaning.

2. What is meant by : Tautology, Synecdoche, Paraphrase, Cæsura ? Give an original example of each.

3. Explain briefly and illustrate : word-branching ; Latin element of the First Period ; Latin doublets ; the expulsion of gutturals.

## II.

4. What is the English language said to have gained from its adoption of Latin and French words?

5. What do we mean by the expression "scientific terms"? From what source or sources are these generally obtained? Why from these sources rather than from others?

6. Explain what Trench means by speaking of the *poetry* that is contained in words; and give two examples.

## III.

7. Comment on, and illustrate: fair words for ugly things; question-begging words; mistaken etymologies; resistance to new words.

8. Give the derivation of each of the following words: chancellor, cardinal, villain, parchment, gipsy, lumber room, ostracise, stranger.

9. Write a short paragraph on the importance of making distinctions between synonymous, or nearly synonymous words; and support your opinion with the help of at least *two* examples.

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 ENGLISH LITERATURE.

FRIDAY, 5TH JUNE:—MORNING, 9 TO 10.30.

1. Make notes on each of the following, with the name of the author and the date of the work:—*Ormulum*, *Vision of Piers Plowman*, *Decline and Fall of the Roman Empire*, the *Task*, *Gilde Harold*, *Sartor Resartus*.

2. What title to literary fame is possessed by each of the following writers:—Richard Hooker, Christopher Marlowe, Abraham Cowley, Percy Bysshe Shelley, Thomas de Quincey? Name the chief work of each; and give some idea of the nature of any *one* of these masterpieces.

3. Explain what is meant by saying that the literature of the first half of the nineteenth century is characterized by the presence of "new ideas."

4. Give in outline the events contained in any *one* act of *Julius Cæsar*. Quote any passage, not exceeding ten lines in length, remarkable for poetic beauty or dramatic force.

5. Give three examples of peculiarly Shaksperian words, phrases, or expressions used in *Julius Cæsar*; and explain their meaning.

6. Narrate briefly the events contained in any *one* canto of the *Lady of the Lake*.

7. What, according to the best opinion, are the specially poetic merits of the poetry of Scott? Support your statements by quoting from the text.



8. Illustrate the following points with reference to *The Lady of the Lake* :  
(a) Scott's accuracy in depicting national life and customs; (b) his patriotic spirit; (c) his love of nature.

### GREEK HISTORY.

MONDAY, 8TH JUNE :—AFTERNOON, 2 TO 3.30.

1. Write an account of :  
(a) Xerxes' invasion of Greece ;  
(b) Athens under Pericles.
2. Make brief notes on : Delphi, Miltiades, Peace of Antalcidas, Epaminondas, Arbela, Achaean League.

### ROMAN HISTORY.

3. Trace the main events of the Second Punic War.
4. Write a short essay on the age of Augustus.
5. Make brief notes on : Servius Tullius, Licinian laws, Pyrrhus, Tiberius Gracchus, Sulla, Trajan.

### COLLIER'S GREAT EVENTS.

6. Write briefly but clearly on :  
(a) Justinian  
(b) Charlemagne ;  
(c) Luther.
7. Sketch :  
(a) The Third Crusade ;  
(b) The reign of Ferdinand and Isabella ;  
The ministry of Cardinal Richelieu.
8. Make brief notes on : Hegira, Treaty of Verdun (843), Peter the Hermit, Sempach, Gustavus Adolphus, War of the Spanish Succession, Peter the Great.

### OPTIONAL GEOGRAPHY.

FRIDAY, 5TH JUNE :—MORNING, 10.30 TO 12.

(N.B.—Six questions to be answered, namely, any ~~two~~ from each division.)

#### I.

1. Define latitude and longitude ; how do degrees of latitude and longitude vary in length ?  
On which of the two do variations in time depend ?

Which meridian is now most largely used as the Prime Meridian?

What are the terrestrial and celestial ecliptics?

Draw on a plan of a globe ecliptic, tropics, zones.

2. Give a brief definition or description or explanation of the following:

|                 |            |                   |
|-----------------|------------|-------------------|
| Spring tide.    | Delta.     | Artesian well.    |
| Spring equinox. | Rapid.     | Trade winds.      |
| Gulf stream.    | Watershed. | Isothermal lines. |
| Lagoons.        | Geyser.    | Fauna.            |

3. How does vegetation vary with altitude? Give examples.

Mention any six ways in which man has altered the surface of the earth.

Mention five races of men and the continent in which each has most flourished.

## II.

4. Mention two countries in the Northern and one in the Southern hemisphere from which the following three products are or could be exported:

(a) Wheat, (b) oats, (c) wine; (d) what are the three chief sources of sugar in Canada, Jamaica and Germany respectively? (e) Mention four important wool ports (not more than one on the same continent or island.) (f) Mention two European towns of different countries which are centres of the wool manufacture.

5. Draw a map of the Basin of the Mississippi; name its mountainous boundaries; what other basin touches it on the north?

Name six important tributaries, six states wholly enclosed in the basin, and six important cities in it.

6. Draw a rough map of Africa, mark on it (a) four of the most important rivers, (b) desert areas, (c) five lakes, (d) the equator, (e) three ranges of mountains, (f) name the water boundaries of Africa. (also mark the spheres of German, Italian, French and Dutch influence).

## III.

7. Describe *one* of the following:—Belgium, Switzerland, Greece. Manitoba, by giving boundaries, area, one river, three towns, natural products, exports, form of government, chief pursuits of inhabitants, religion, race.

8. Place in order of (a) area, (b) population, the following empires, British, Chinese, Russian, giving, roughly, present area and population of each.

(To which of these does the title "United Empire of all the Continents" apply, and justify this title?)

9. Give a brief description of (a) Venezuela or the Transvaal (b) and Prince Edward Island.

10. Supply the geographical detail in connection with the following names, state in or near what countries each is:

White, Black, Blue, Green, Yellow; Bass, Bonn, Charles, George, Helena. Cenis, Canary, Quantock, Parramatta, Tonga; if more than one of the name, give all you can, as in case of North Cape, North Sea, etc.

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## ZOOLOGY.

TUESDAY A.M., JUNE 9TH:— TIME 1½ HOURS.

1. What are coral reefs? Describe fully the animals concerned in their formation.

2. Give a full description of any Canadian mollusk or crustacean.

3. State briefly the class distinctions of the different divisions of the *Echinodermata*; give examples, with the localities where they can be obtained.

4. What are the principal distinctions between Vertebrates and Invertebrates; mention any connecting links.

5. Briefly characterize and give examples of *Aves*, *Insecta*, *Rhizopoda*, *Pisces*, *Annelida*, *Brachiopoda*, *Araneida* and *Cheiroptera*.

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## BOTANY.

FRIDAY, JUNE 5TH:—AFTERNOON, 2 TO 3.30.

1. Describe the floral organs and state their functions.

2. Distinguish between hypogynous, perigynous, and epigynous flowers, giving examples.

3. Describe a typical vegetable cell.

4. What are the chief plant foods? Whence are they obtained?

5. Give the general characteristics of the Pteridophytes.

6. Classify and describe the specimen given.

Examiners will please supply any common wild flower, and take pains that all parts of the plant are present.

## ELEMENTARY CHEMISTRY.

THURSDAY, JUNE 4TH:—MORNING, 9 TO 10.30.

NOTE:—Answer two questions only from each section.

## I.

1. What is a chemical equation? Give three examples.
2. What do you understand by physical as distinguished from chemical properties? What are (*a*) the physical and (*b*) the chemical properties of Oxygen?
3. How may it be shown that Water is a compound and not an element?

## II.

4. Explain the nature and relationship of acids, bases and salts.
5. What are the reasons for considering that Nitrogen and Oxygen are mixed together and not chemically combined in the air?
6. How many liters of Hydrochloric Acid gas (1 liter = 1.63 grm.) can be made from 50 grams of sodium chloride?

## III.

7. How is Hydrogen Sulphide prepared? Give a sketch of the apparatus that you would employ. What are the properties and uses of the gas?
8. What takes place (*a*) when Copper Oxide is heated with charcoal, and (*b*) when slaked Lime is warmed with Ammonium Chloride?
9. How is ordinary Phosphorus made? What are its properties?

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PHYSIOLOGY AND HYGIENE.

FRIDAY, JUNE 5TH:—AFTERNOON, 3.30 TO 5.

*Note.*—Candidates are required to answer the last three and any two of the first three questions.

1. Name the bones of the arm, describe fully any one, stating its composition, mode of growth and mode of repair.
2. Describe the blood. In what structures is it normally found? State its function. What causes it to circulate? How would you proceed to stop a bleeding finger?

3. Write on the structure and function of the different parts of the brain.

4. Make notes on the following: Diaphragm, Larynx, Liver, Thoracic duct, Iris, Stomach, Labyrinth, Parotid, Lachrymal gland, Skin.

5. State briefly the principal impurities to be found in well water, house air, and uncooked food. Briefly indicate how they may be overcome.

6. Briefly state six laws, the observance of which is necessary for good health. Give reasons in each case.

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### PHYSICS.

THURSDAY, June 4TH:—MORNING, 10 30 to 12.

1. "A *liquid* will *dissolve* a solid only when the *adhesion* between them is greater than the *cohesion* in the *solid*."

Define carefully each of the italicized words in this sentence.

What conclusion with regard to adhesion and cohesion would you draw from the fact that hot liquids dissolve solids better than cold?

2. Describe and explain the action of an air-pump, with mercury gauge. Explain how the latter measures the pressure attained.

3. A picture weighing 40 lbs. is suspended by a string 5 feet long passed over a nail and attached to the picture at points 3 feet apart. What will be the tension of the string?

4. A bullet leaves a gun with a horizontal velocity of 1200 feet per second and a vertical velocity of 20 feet per second. Find the greatest height and the horizontal range.

5. A truck weighing 10,000 lbs. is pulled steadily with a force equal to 150 lbs. weight. How soon will it be going 30 miles an hour?

6. Explain how it is that an iron ship can float. A piece of copper weighs 11.378 grms. in air and 10.101 grms. in water. Find its specific gravity.

7. Explain what is meant by "the mechanical equivalent of heat is 424 kgm."

A pile driver weighing 1000 kilogrammes falls 8 metres on the pile. If its energy were all converted into heat, how much would it raise the temperature of 1 kil. of water?



8. Five pounds of ice at  $0^{\circ}$  centigrade are placed in ten pounds of water at  $80^{\circ}$  C. What indications would a thermometer in the block of ice shew? And what would be the final temperature?

9. Describe one experiment illustrating (a) expansion by heat, and one illustrating (b) convection; and mention one or two important applications of each.

### GEOMETRICAL AND FREEHAND DRAWING.

MONDAY, JUNE 8TH:—9 TO 12 A.M.

1. From a point 0.5 in. outside the circumference of a circle of 2 in. diameter draw a tangent to the circle (a) using the centre of the circle (b) without the aid of the centre.

2. The point C is distant 1.0 in. from a straight line AB and the point D is 1.5 in. distant from the same line. C and D are on the same side of the line and the distance between them is 2.0 in. Through C and D draw lines meeting in AB and making equal angles with it.

3. The sides of a triangle are 1.25 in., 1.50 in., and 1.75 in. in length. Construct a parallelogram having an area and perimeter equal to the triangle.

4. Draw one loop of the cycloid (circle rolling on a straight line) generated by a point in the circumference of a circle of 2 in. diameter.

5. Construct an hyperbola having an axis of 3 in., a height of 1.5 in. and a double ordinate of 2.5 in.

6. Sketch an example of Greek ornament.

7. Make a slightly enlarged freehand copy of the ornament before you.

8. Make a freehand drawing of the objects before you as they appear from your point of view.

(a) A bracket arm.

(b) A rope transmission pulley.

N.B.—Candidates are informed that the geometrical (the first five questions) cannot be answered without instruments (compasses and straight-edge), and that no marks will be given for the freehand problems 6, 7 and 8, if instruments are used in drawing them.

The three objects in questions 7 and 8 are to be placed on separate tables and are to be four feet distant from the candidate. The bracket arm is to be placed so that the pencil line is horizontal and at an angle of  $45^{\circ}$  with the line of sight. The pulley is to be placed with its rotation plane vertical and at  $30^{\circ}$  to the line of sight.

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# ADVANCED A. A.

(In the order given in the Regulations.)

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### III. ADVANCED OPTIONAL SUBJECTS.

#### LATIN.

##### I GRAMMAR.

NOTE.—Candidates are requested to answer questions 2, 3, 5, 7, and 9 of the Grammar and Composition paper for the Ordinary A. A., and the following :

1. Classify conditional sentences in Latin, illustrating by examples.
2. (a) What is meant by an *anacoluthon*, *diaeresis*, *asyndeton*, and *hendiadys*. (b). Distinguish between *odi hominem qui hoc fecit* and *odi hominem qui hoc fecerit*.
3. Inflect *edo* (*I eat*) in the pres. indic. and sub. act., giving the alternate forms.
4. Write the locative of *Carthago*, *Athenae*, *Corinthus*, *Gades*.

5. Translate into Latin : (1) Caesar was in the neighbourhood of Rome, when he was informed that the Helvetii were about to cross the Rhine by the bridge which was near Geneva. Accordingly he set out from the city, and in eight days reached that town and cut down the bridge. (2) Though he saw that all hated and feared him to such a degree that the mere sight of him wounded their feelings, he preferred to be gazed at with hostile eyes rather than respect the authority of the commonwealth and obey its judgment. Your country, Catiline, bids you depart, and thus addresses you : " For a long time I have borne in silence your crimes, your deeds of baseness, the murdering of citizens, the harassing and plundering of allies."

##### II.

##### VIRGIL AND CICERO.

NOTE.—Candidates will do questions 5, 7, and 9 of the paper for the ordinary A. A., and translate the following passages :

##### A.

Magna dis immortalibus habenda est, atque huic ipsi Statori, antiquissimo custodi huius urbis, gratia, quod hanc tam tætam, tam horribilem tanque infestam rei publicae pestem totiens iam effugimus. Non est saepius in uno homine summa salus periclitanda rei publicae. Quam diu mihi consuli designato, Catilina, insidiatus es, non publico me praesidio, sed privata

diligentia defendi. Cum proximis comitiis consularibus me consulem in campo et competitores tuos interficere voluisti, compressi conatus tuos nefarios amicorum praesidio et copiis, nullo tumultu publice concitato denique, quotienscumque me petisti, per me tibi obstiti, quamquam videbam perniciem meam cum magna calamitate rei publicae esse coniunctam.

## B.

Sed si, omissis his rebus, quibus nos suppeditamur, eget ille,—senatu, equitibus Romanis, aerario, vectigalibus, exteris nationibus,—si, his rebus omissis causas ipsas quae inter se configunt contendere velimus, ex eo ipso quam valde ille iaceant intellegere possumus. Ex hac enim parte pudor pugnat, illinc petulantia; hinc pudicitia, illinc stuprum; hinc continentia, illinc sibi; postremo copia cum egestate, bona ratio cum perdita, bona denique spes cum omnium rerum desperatione configit. In eius modi certamine ab proelio, nonne, etiam si hominum studia deficiant, di ipsi immortales cogant ab his praeclarissimis virtutibus tot et tanta vitia superari?

C. (*At Sight.*)

Cum uterque utrique esset exercitus in conspectu fereque e regione castris castra poneret, dispositis exploratoribus necubi effecto ponte Romani copias transducerent, erat in magnis Caesari difficultatibus res ne maiorem aestatis partem flumine impediretur, quod non fere ante autumnum Elaver vado transiri solet. Itaque, ne id accideret, silvestri loco castris positus e regione unius eorum pontium quos Vercingetorix rescindendos curaverat, postero die cum duabus legionibus in occulto restitit; reliquas copias cum omnibus impedimentis, ut consueverat, misit, captis quartis quibusque cohortibus uti numerus legionum constare videretur. Hisquam longissime possent progredi iussis, cum iam ex diei tempore coniecturam caperet in castra perventum, iisdem publicis quarum pars inferior integra remanebat pontem reficere coepit. Celeriter effecto opere legionibusque transductis, et loco castris idoneo delecto reliquas copias revocavit. Vercingetorix re cognita, ne contra suam voluntatem dimicare cogeretur, magnis itineribus antecessit.

D. (*At Sight.*)

At Hamilcar, ut Karthaginem venit, multo aliter ac sperarat, rem publicam se habentem cognovit. Namque diuturnitate externi mali tantum exarsit intestinum bellum, ut nunquam in pari periculo fuerit Karthago, nisi cum deseta est. Primo mercennarii milites, quibus adversus Romanos usi erant, desciverunt; quorum numerus erat viginti milium. Hi totam abalienarunt Africam, ipsam Karthaginem oppugnarunt. Quibus malis adeo sunt Poeni perterriti, ut etiam auxilia ab Romanis patierint; eaque impetrarunt. Sed extremo, cum prope iam ad desperationem pervenissent,



Hamilcarem imperatorem fecerunt. Is non solum hostes a muris Karthaginis removit, cum amplius centum milia facta essent armatorum, sed etiam eo compulit, ut locorum angustiis clausi plures fame quam ferro interirent. Omnia oppida abalienata, in his Uticam atque Hipponem, valentissima totius Africae, restituit patriae. Neque eo fuit contentus, sed etiam fines imperii propagavit, tota Africa tantum otium reddidit, ut nullum in ea bellum videretur multis omnis fuisse.

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GREEK.

(The answers to the questions in groups (A), (B) and (C) are to be kept separate).

A.

1. Translate Xen. Anab., Bk. I. :—

Ἐπεὶ δὲ ἐδόκουν αὐτῷ σχολαίως ποιεῖν, ὥσπερ ὀργῇ ἐκέλευσε τοὺς περὶ αὐτὸν Πέρσας τοὺς κρατίστους, συνεπισπεῦσαι τὰς ἀμάξας. Ἐνθα δὲ μέρος τι τῆς εἰταξίας ἦν θεάσασθαι. Ῥιψαντες γὰρ τοὺς πορφυροῦς κάπνους, ὅπου ἕκαστος ἔτυχεν ἱστηκῶς, ἵεντο, ὥσπερ ἂν ἐράμῃοι τις περὶ ῥίκης, καὶ μάλα κατὰ πρηνοῦς γηλόφου, ἔχοντες τούτους τε τοὺς πολυτελεῖς χιτῶνας, καὶ τὰς ποικίλας ἀναξυρίδας· ἔνιοι δὲ καὶ στρεπτοῖς περὶ τοῖς τραχήλοις, καὶ ψέλλια περὶ ταῖς χερσίν· εἰθὺς δὲ σὺν τούτοις εἰσπηδήσαντες εἰς τὸν πηλὸν, θάπτον ἢ ὥς τις ἂν ᾔετο, μετεώρους ἐξεκόμισαν τὰς ἀμάξας.

Explain the force of the ἦν before θεάσασθαι. Parse ἵεντο, and derive μετεώρους,

2. Translate, Xen. Anab. Bk. II. :—

Κλέαρχος δὲ ἀπεκρίνατο τοῖς ταῦτα λέγουσιν· “Ἐγὼ ἐνθυμούμαι μὲν καὶ ταῦτα πάντα· ἐννοῶ δὲ, ὅτι, εἰ νῦν ὀπιμεν δόξομεν ἐπὶ πολέμῳ ἀπιέναι, καὶ παρὰ τὰς σπονδὰς ποιεῖν. Ἐπειτα πρῶτον μὲν ἀγορὰν οὐδεὶς ἡμῖν παρέξει·

οὐδ' ὀπόθεν ἐπισιτιούμεθα· αὐθις δὲ ὁ ἡγησόμενος οὐδεὶς ἔσται· καὶ ἅμα ταῦτα ποιοούντων ἡμῶν εὐθὺς Ἀρίαῖος ἀφ' ἐστήξει· ὥστε φίλος ἡμῖν οὐδεὶς λελειψεται, ἀλλὰ, καὶ οἱ πρόσθεν ὄντες, πυλέμιοι ἡμῖν ἐσονται. Ποταμὸς δὲ εἰ μέν τις καὶ ἄλλος ἄρα ἡμῖν ἐστί διαβατέος, οὐκ οἶδα· τὸν δ' οὖν Εὐφράτην ἴσμεν ὅτι ἀδύνατον διαβῆναι, κωλυνόντων πολεμίων,

Derive σπονδὰς—what is its signification in the singular number?

3. (1) \*Ουτοι ἔλεγον ὅτι κῆρος μὲν τέθνηκεν, Ἀρίαῖος δὲ εἶη μετὰ τῶν ἄλλων βαρβάρων—account for the difference of the moods in the words underlined. (2) Οἱ μὲν ἐγγύτατα τῶν πολεμίων καὶ ἔφυγον ἐκ τῶν σκηνωμάτων. (3) καὶ γὰρ ὀρᾶν στυγρὸς ἦν, καὶ τῇ φωνῇ τραχύς. καὶ γνώμη δὲ ἐκόλαζεν. Of whom are these words spoken and what is the full meaning of ἐκόλαζεν?

### B.

4. Translate Iliad IV., vss. 223-231.

Explain (a) the forms πόλεμόνδε, ἄκην, (b) parse fully οἷσιν, ἴσαν, εἰμένοι, (c) what is the construction of μεγάλη? (d) what difference of reading is there in line 423?

5. Write a note on the use of the simile in Homer.

6. Translate Odyssey VII., vss. 122-132.

7. Explain the meaning of περὶ κῆρι. τετίμηται, κυανός, ἔντεα δαιτός.

8. What is the probable date of the Odyssey? is it of the same date as the Iliad?

C.

(Meaning of Greek words to be given throughout.)

1. Decline in singular *νεώς*, *ναῦς*, *βασιλεύς*, and in plural *ἥρως*, *υἱός*, *θρίξ*.

2. Decline together *ὁ μέγας ἀνὴρ*, *ἡ χαρίεσσα γυνή*, *τὸ ἐλαν ὕδωρ*.

3. Compare *ἡδύς*, *αἰσχρός*, *καλός*, *ῥάδιος*.

4. Decline in singular *οὐδείς*, *ὅστις*, *ἐγώ*.

5. Give in full the aorist, ind. act. of *λαμβάνω*,  
the pres. ind. act. of *πλέω* (uncontracted or contracted form)  
the pres. opt. act. of *ἐρωτάω*                   “                   “  
the pres. inf. act. of *ζάω*                         “                   “

6. Give the 1st pers. sing. of the fut. ind. act., the aor. ind. act. and the perf. ind. act. of the following verbs: *φθάνω*, *ἐλαύνω*, *πάσχω*, *αἰρέω*, *φέρω*, *βάλλω*.

7. State with examples the construction of *χρῶμαι*, *τυγχάνω*, *λανθάνω*.

8. Exemplify the different uses of *αὐτός*.

9. Classify with examples the normal forms of conditional sentences in Greek.

10. Translate into Greek:

(a) The eagle has large wings; (b) some admire the mother, others the daughter; (c) no one has suffered such calamities as I have; (d) he said that he did not care; (e) if I had anything, I would give it; (f) I acknowledge that this would be false.

## GEOMETRY.

TUESDAY, JUNE 2ND, 1896:—9 TO 12 A.M.

1. (a) If a straight line fall on two parallel straight lines, it makes the alternate angles equal to one another, and the exterior angle equal to the interior and opposite angle on the same side; and also the two interior angles on the same side together equal to two right angles.

(b)  $ABC$  is to an isosceles triangle: find points  $D, E$  in the equal sides  $AB, AC$  such that  $BD, DE, EC$  may all be equal.

2. (a) To describe a parallelogram equal to a given rectilineal figure, and having an angle equal to a given rectilineal angle.

(b) Straight lines joining the middle points of adjacent sides of a quadrilateral form a parallelogram.

3. (a) If a straight line be divided into any two parts the squares on the whole line and on one of the parts are equal to twice the rectangle contained by the whole and that part together with the square on the other part.

(b) Show how this proposition represents the "square of the difference of two straight lines."

(c) Enunciate the two propositions of the second Book which can both be enunciated in the following way:

"The difference of the Squares of any two straight lines equals the rectangle contained by the sum and the difference of the two straight lines."

4. (a)  $ABC$  is an acute angle in the triangle  $ABC$ ,  $AD$  is perpendicular from  $A$  on the direction of  $BC$ , meeting  $BC$  in  $D$ :

Prove that the squares on  $AB, BC$  together exceed the square on  $AC$  by twice the rectangle  $BC, BD$ .

(b)  $ABC$  is a triangle,  $D$  is the middle point of the base,  $AD$  drawn from  $A$  to  $D$ :

Prove that

$$\text{Sqs. on } AB, AC = 2 \text{ sum of sqs. } AD, DB.$$

5. (a) No two circles can touch in more than one point internally or externally.

(b)  $AB$  is a chord of a circle, if  $C$  and  $D$  are on the same side of  $AB$ , the angles  $ACB, ADB$  are equal:

But if  $C$  and  $D$  are on opposite sides of  $AB$ , the angles  $ACB, ADB$  are equal to two right angles.

6.  $ABC, ADE$  are chords of a circle meeting external to the circle at  $A$ .

Prove that  $AB, AC = AD, AE = \text{square of tangent from } A \text{ to the circle.}$

Conversely prove that if  $AB, AC \cong AD, AE$ , that  $BCDE$  must be on a circle: using anything in the first 4 Books.

7. Given a unit length, show how to construct lengths to represent  $\sqrt[3]{2}, \sqrt[3]{3},$  and  $\sqrt[3]{5}$

8. (a) Show how to trisect a right angle.

(b) Also how to divide it into five equal parts.

(c) Also how to inscribe a regular pentagon in a circle.

9. (a) What are the two tests of similar figures? In what class of figures do the two tests follow from each other?

(b) Find a third proportional to two straight lines.

(c) Find a mean proportional between two straight lines.

10. If four straight lines are proportionals, prove:

(a) That the rectangle contained by the extremes equals the rectangle contained by the means.

(b) That the similar and similarly described figure on them shall be proportionals with converse.

# ALGEBRA.

1. Simplify:—(a)  $\frac{x^2 - 4}{x^2 + 4x + x^2} \div \frac{\left(1 - \frac{x}{a}\right)^2 \left(1 - \frac{x}{a}\right)}{a^3 - x^3}$

(b)  $\frac{x^4 - 8x}{x^2 - 4x - 5} \times \frac{x^2 + 2x + 1}{x^3 - x^2 - 2x} \div \frac{x^2 + 2x + 4}{x - 5}$

2. A train travelled a certain distance at a uniform rate of speed. Had the speed been 6 miles an hour more the journey would have occupied 4 hours less; and had the speed been 6 miles an hour less the journey would have occupied 6 hours more. Find the distance travelled.

3. Solve (a)  $\sqrt{x-a} + \sqrt{x-b} = \sqrt{a-b}$

(b)  $\frac{5}{x+2} + \frac{3}{x} = \frac{14}{x+4}$

(c)  $\begin{cases} x + y = 15. \\ x^2 + y^2 = 125. \end{cases}$

4. Divide  $\sqrt[3]{x^2} + 2x^{\frac{1}{3}} - 16x^{-\frac{2}{3}} - \frac{32}{x}$  by  $x^{\frac{1}{3}} + 4x^{-\frac{1}{3}} + \frac{4}{\sqrt[3]{x}}$

and simplify  $\frac{\sqrt{x^2+1} + \sqrt{x^2-1}}{\sqrt{x^2+1} - \sqrt{x^2-1}} + \frac{\sqrt{x^2+1} - \sqrt{x^2-1}}{\sqrt{x^2+1} + \sqrt{x^2-1}}$



5. A debt can be discharged in three years by paying \$5 the first month, \$7 the second, and \$9 the third, and so on. Find the amount of the last payment, and the amount of the debt.

6. When a number of 2 digits is multiplied by the digit on the left, the product is 280; if the sum of the digits be multiplied by the same digit, the product is 55. Find the number.

7. Show that three quantities,  $a$ ,  $b$ , and  $c$ , are in arithmetical, geometrical or harmonical progression according as

$$\frac{a-b}{b-c} = \frac{a}{a}; \text{ or } \frac{a-b}{b-c} = \frac{a}{b}, \text{ or } \frac{a-b}{b-c} = \frac{a}{c}$$

8. The 5th term of a geometrical series is 4 times the 3rd term, and the sum of the first two terms is  $-4$ ; find the series.

### TRIGONOMETRY.

TUESDAY, JUNE 2ND :—2 TO 5 P.M.

1.(a) Explain and prove the statement, angle =  $\frac{\text{arc}}{\text{radius}}$

(b) Express in degrees, etc., the unit angle of the system used in (a).

2. Given  $\cos \theta = .5$ : find  $\sec \theta$ ,  $\tan \theta$ ,  $\cot \theta$ ,  $\operatorname{cosec} \theta$ ,  $\sin \theta$  and  $\operatorname{versin} \theta$ .

3. (a) Prove that  $\sin (A - B) = \sin A \cos B - \cos A \sin B$ . By using  $-B$  for  $B$  deduce

(b)  $\sin (A + B) = \sin A \cos B + \cos A \sin B$ .

(c) Find  $\sin 15^\circ$ .

(d) Prove that the values given by  $\sin (45^\circ + 30^\circ)$ ;  $\sin (60^\circ + 15^\circ)$  and  $\sin (90^\circ - 15^\circ)$  will all agree.

4. Prove  $\cos Q + \cos P = 2 \cos \frac{P+Q}{2} \cos \frac{P-Q}{2}$  (a)

and  $\cos Q - \cos P = 2 \sin \frac{P+Q}{2} \sin \frac{P-Q}{2}$  (b)

(c) Express in simplest form the quotient of (a) when divided by (b)

(d) Prove  $\sin \frac{\pi}{3} - \cos \frac{\pi}{5} = 2 \cos \frac{19\pi}{60} \sin \frac{\pi}{60}$

5. Prove  $\sec 72^\circ - \sec 36^\circ = \sec 60^\circ$  (a).

Prove  $\sin 10^\circ = (\sin 81^\circ + \sin 9^\circ)(\sin 81^\circ - \sin 9^\circ)$  (b).

6. Prove  $\tan (45^\circ - A) + \tan (45^\circ + A) = 2 \sec 2A$ .

(b) Solve equation  $\cos A^2 A = \frac{3}{4}$ .

7. (a) If  $m$  is a number of which the logarithm to base  $a$  is  $x$  and to base  $b$  is  $y$ .

Prove that  $y = \left( \frac{1}{\log_a b} \right)^x$ .

(b) Given  $\log 2 = 3010300$ : find  $\log_a$  of 25, 640, 81, and .0096.

8. In an  $\triangle$  prove

(i)  $a = b \cos C + c \cos B$ .

(ii)  $a^2 = b^2 + c^2 - 2bc \cos A$ .

(iii)  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} = 2R = \frac{a}{2S} = \frac{abc}{rs}$ .

(iv) Area of triangle ( $= S$ )  $= \sqrt{s(s-a)(s-b)(s-c)} = \frac{ab \sin C}{2}$ .

$s$  = semiperimeter.

$R$  = radius of circumscribing circle.

$r$  = radius of inscribed circle.

9. (a) Having given  $a$ ,  $b$  and  $C$ : solve the triangle;

(b) Let  $a = 12.96$ ,  $b = 9.78$ ,  $C = 57^\circ 48' 32''$

find  $A$  and  $B$ ,

having given  $\log 3.18 = .5024271$

$\log 22.74 = 1.3567905$

$L \cot 28^\circ 54' 16'' = 10.2570579$

$L \tan 14^\circ 12' 46'' = 9.4035945$ .

10. The angle of elevation of the top of a steeple is  $60^\circ$  from a point on the ground. That of the top of the tower on which the steeple rests is  $45^\circ$  from the same point. What proportion does the height of the steeple bear to that of the tower?

## ENGLISH LANGUAGE.

MONDAY, 8TH JUNE :—AFTERNOON, 2 TO 5.

1. Examine the assertion that "English is a member of the Indo-European family of languages, in the Low-Germanic group of the Teutonic branch." Explain this carefully.

2. In what respects is English said to differ from Anglo-Saxon?

3. Describe the effect on the English language of Latin belonging to the *First Period*, that is, Latin during the Roman occupation.

4. Into what Periods is the History of the English language divided by Lounsbury?

5. Make notes on : rhotacism ; the loss of compounding power in the English language ; the late appearance of *its* ; verbs originally strong becoming weak ; the steady disappearance of inflections.

6. Give examples of English words derived from : (a) Spanish, (b) Italian, (c) modern French, (d) Persian, (e) Hindostanee.

7. Derive the following words : megrim, kerchief, lamprey, rhyme, chronicle, jolly.

8. Explain fully : substantive clause, attributive relation, collateral sentences, incomplete predication. Illustrate each with an original example.

9. Write an essay of two pages on any one of the following subjects :—

A. The Bicycle.

B. Boys' Books.

C. A Successful Holiday.

## ENGLISH LITERATURE.

THURSDAY, 4TH JUNE :—AFTERNOON, 2 TO 5.

1. Give, with dates, some account of the literary career of Chaucer, Pope, Byron.

2. Comment briefly on the nature of each of the following works ; give the name of the author and the date : *Areopagitica*, *Apologie for Poetrie*, *Castle of Indolence*, *Idylls of the King*, *Modern Painters*.

3. Name (a) three great English theologians ; (b) the three greatest masters of English fiction ; (c) three leading English historians. Give the name of the principal work of each.

4. Give some account of (a) the first English tragedy, (b) the first English comedy.

5. What are the principal dramatic works of Christopher Marlowe and of Robert Greene? Specify in some precise way the literary and poetic merits of both these dramatists.

6. Make some notes on the purpose, the allegorical character, and the merits of Spenser's *Faerie Queen*.

7. Give a short account of the composition of *Paradise Lost*, and name two sources whence Milton is supposed to have drawn inspiration.

8. Give in outline the events contained in *either* Book I *or* Book II; and note at least two passages which must be considered as best showing Milton's poetic genius. Give your reasons for selecting these passages.

9. Select from the books studied three striking images or comparisons; and note any peculiarly Miltonic characteristics of thought or of language that they may display.

10. What signs of Milton's thorough classical training are to be noticed in reading the first two books of *Paradise Lost*?

## HISTORY.

FRIDAY, 5TH JUNE:—AFTERNOON, 2 TO 5.

### I.

1. (a) Give an account of the career of Themistocles.

(b) Make brief notes on: Hippias, Aristides, Mycale, Mardonius, Pausanias.

2. (a) Describe the course of the Syracusan Expedition.

(b) Make brief notes on: Alcibiades, Brasidas, Thucydides, Melos, Egospotami.

### II.

1. Trace the career of Marius down to 84, B. C.

2. (a) Contrast Caesar and Pompey as political leaders.

(b) Make brief notes on: Cinna, Sertorius, Mutina, Varus, Germanicus.

### III.

1. Give a list of the plots formed against the life of Queen Elizabeth, indicating the importance of each.

2. What was the attitude of James I. towards :

- (a) Dissenters.
- (b) Parliament.
- (c) Spain.

3. Write upon Edmund Spenser or the part of the Scots in English affairs 1635 to 1651.

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### BOTANY.

MONDAY, JUNE 8TH:—9 TO 12 A.M.

1. Describe fully the structure of a typical root.
2. Describe the various kinds of underground stems, giving examples.
3. Distinguish between exogenous and endogenous plants.
4. Give an account of phyllotaxy.
5. Define and give examples of the chief varieties of indeterminate inflorescence.
6. State what you know in regard to the suppression of the andrœcium and gynœcium.
7. Give an account of various modifications of flowers which ensure cross-fertilization.
8. Describe an ovule, and show in what ways it is modified to form a seed.
9. Describe the chief varieties of indehiscent fruits, giving examples.
10. What are the chief differences between angiosperms and gymnosperms? Give examples.
11. Give a full description of the accompanying specimen, with its family, genus, and species.







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